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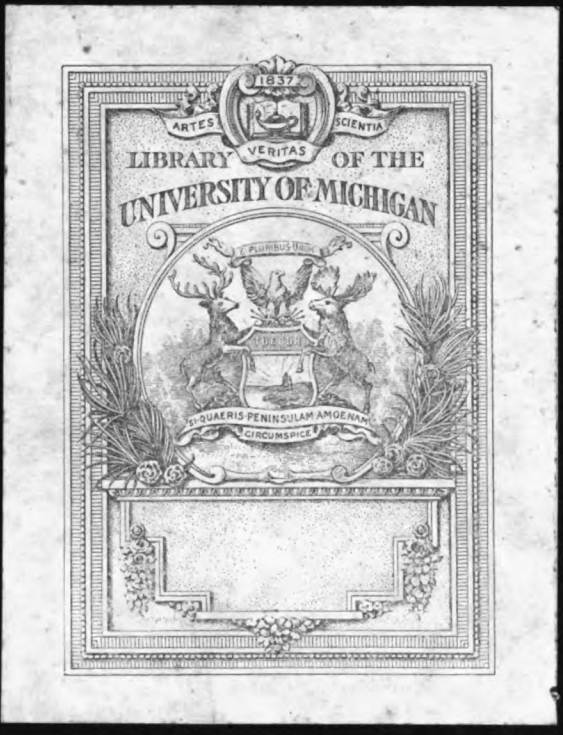

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TRANSACTIONS

OF THE

FORTIETH ANNUAL MEETING

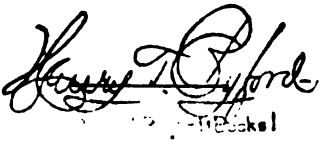
OF THE

Illinois State Medical Society

HELD IN

CHICAGO, MAY 6, 7 AND 8,

1890.



CHICAGO:
JAMESON & MORSE COMPANY, 175 MONROE STREET.
1890.

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THE FORTY-FIRST ANNUAL MEETING

WILL BE HELD

IN SPRINGFIELD,

Beginning at 10 o'clock, A. M., Tuesday, the 19th day of May, 1891.

EXTRACTS FROM THE CONSTITUTION ADOPTED AT THE LAST MEETING.

ARTICLE II, SEC. 2. All regular resident members of such local or district medical societies now organized, or which may be organized hereafter, and entitled to recognition by this Society, are eligible to the position of permanent member of this Society, entitled to attend all its meetings, participate in all its business, including the right to vote on all questions, and shall retain permanent membership so long as they remain members in good standing in their several local or district societies and pay the annual dues of this Society.

ARTICLE V, SEC. 5. *The Nominating Committee* shall also nominate a chairman and secretary for each of three sections which shall be as follows:

(*a*) Section on Practical Medicine, Therapeutics and Materia Medica.

(*b*) Surgery, Surgical Specialties and Obstetrics.

(*c*) Etiology, State Medicine or Sanitary Science, Medical Jurisprudence and Syphilography.

SEC. 6. *The Nominating Committee* shall also nominate three persons to deliver addresses in general session on some topic belonging to each section; said addresses not to exceed forty-five minutes in delivery.

SEC. 7. It shall be the duty of the officers of each section so organized to arrange and prepare for the presenting of papers and essays suitable to each section.

SEC. 8. *The Committee of Arrangements* shall provide a suitable room for the general sessions, and a separate room for the meeting of each section when, in the judgment of the Committee of Arrangements and the officers of the Society, it shall be deemed necessary for the sections so to meet.

SEC. 9. The general sessions of the Society shall be held in the morning of each day, and the evening of the second day, if so ordered by the Society.

SEC. 10. The meetings of the sections shall be held in the afternoons of each day and the evening of the first day, if so ordered by the Society.

☞ **The new Constitution and By-Laws are not in shape to be printed in this volume of Transactions, but the above extracts contain all the new provisions that are material for conducting the next meeting.** D. W. G.

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OFFICERS,
COMMITTEES AND LIST OF MEMBERS
FOR THE YEAR 1890–91.

OFFICERS.

President.

JAMES P. MATTHEWS, CARLINVILLE.

First Vice-President.

CHARLES C. HUNT, DIXON.

Second Vice-President.

FREDERICK C. SCHAEFER, CHICAGO.

Permanent Secretary.

DAVID W. GRAHAM, CHICAGO.
133 CLARK STREET.

Treasurer.

THOMAS M. MCILVAINE, PEORIA.

Assistant Secretary.

GEORGE N. KREIDER, SPRINGFIELD.

Judicial Council.

Term Expires 1891.
- GEO. WHEELER JONES, Danville.
- E. T. GOBLE, Earlville.
- H. C. DONALDSON, Morrison.

Term Expires 1892.
- CHARLES C. HUNT, Dixon.
- A. T. BARNES, Bloomington.
- L. G. THOMPSON, Lacon.

Term Expires 1893.
- S. C. PLUMMER, Rock Island.
- J. L. WHITE, Bloomington.
- J. L. HALLAM, Centralia.

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SECTIONS.

Practice of Medicine.

President—William O. Ensign, Rutland. Secretary—Thomas J. Pitner, Jacksonville.

Surgery, Surgical Specialties and Obstetrics.

President—Otho B. Will, Peoria. Secretary—Lewis L. McArthur, Chicago.

Etiology, Preventive and State Medicine.

President—B. M. Griffith, Springfield. Secretary—J. H. Miller, Oconee.

ADDRESSES.

Etiology and State Medicine.

Ephraim Ingals, Chicago.

Surgery.

Chas T. Parkes, Chicago.

Practice of Medicine.

Norman Bridge, Chicago.

COMMITTEES.

Committee of Arrangements.

B. B. Griffith, J. A. Prince, Walter Ryan, F. L. Matthews, R. E. Starkweather.

Committee on Necrology.

E. Ingals, Robert Boal, J. H. Rauch.

Committee on Biography.

J. H. Hollister, Chicago.

Committee on Publication.

D. W. Graham, T. M. McIlvaine, G. N. Kreider.

On Amendments to the Medical Practice Act.

Calvin Truesdale, Rock Island, Francis B. Haller, Vandalia, David W. Graham, Chicago, Thos. M. McIlvaine, Peoria, Geo. R. Cowan, Girard.

On Legislation for the Insane.

Ephraim Ingals, Chicago, Richard J. Dewey, Kankakee, James P. Mathews, Carlinville, George N. Kreider, Springfield, Chas. Warrington Earle, Chicago.

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LIST OF PERMANENT AND LIFE MEMBERS.

SMALL CAPITALS indicate those who have complied with the following resolution, adopted May 19th, 1881:

RESOLVED, That when any member of this Society shall have paid his annual dues for fifteen consecutive years, he shall thereafter be deemed a *life member*, and his name shall not be dropped for non-payment of dues; but he shall only be entitled to the annual transactions for the years which he has paid the annual dues.

* Indicates those who have paid their annual dues for the current year.

** Exempt by special vote of the Society.

Absence of * indicates those who have *not* paid their annual dues for the current year.

Italics indicate those who have not paid their dues for two preceding years, and whose names will not again appear in this list, under Section VII., Clause III., of the Constitution.

NAMES.	POSTOFFICE.	COUNTY.
ALBIN G. W.	Neoga	Cumberland.
Alverson, E. M.	Stonington	Christian.
*ANDREWS, EDMUND	Chicago	Cook.
*Andrews, E. Wyllys	Chicago	Cook.
*Angear, J. J. M	Chicago	Cook.
*Anderson, S. T.	Bloomington	McLean.
Armstrong, C.	Carrollton	Greene.
*Babcock, R. H.	Chicago	Cook.
Baker, E. T.	Jacksonville	Morgan.
Barlow, C.	Eaton	Crawford.
*Barnes, A. T.	Bloomington	McLean.
Barritt, W. M.	Onarga	Iroquois.
Barth, Geo. E.	Rock Island	Rock Island.
*Bartlett, A. T.	Virden	Macoupin.
*Baxter, A. J.	Astoria	Fulton.
Baxter, W. W.	Mt. Sterling	Brown.
Beard, C. H.	Chicago	Cook.
Bennett, J. E.	Plano	Kendall.
Berry, P. D.	Springfield	Sangamon.
*Bettman, B.	Chicago	Cook.
*Billings, Frank	Chicago	Cook.

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Bird, A. M.	Mason City	Mason.
*Bishop, S. S.	Chicago	Cook.
Black, C. E.	Jacksonville	Morgan.
Boal, Robert	Peoria	Peoria.
Bolles, Edgar	Macomb	McDonough.
Booth, D. S.	Belleville	St. Clair.
Boughton, W. T.	Edington	Rock Island.
Bowman, E. H.	Andalusia	Rock Island.
Bowman, L. M.	Scottville	Macoupin.
Braffett, J. H	Paw Paw	Lee.
*Braunworth, Anna M.	Monmouth	Warren.
*Bremmer, A. C.	Merritt	Scott.
*Bridge, N.	Chicago	Cook.
*Brower, D. R.	Chicago	Cook.
Brittin, A. L.	Athens	Menard.
*Brown, Moreau R.	Chicago	Cook.
*Brown, J. L.	Peoria	Peoria.
*Brown, Sanger	Chicago	Cook.
*Brockway, V. A.	Chicago	Cook.
Browning, C. C	Adrian	Hancock.
Bruner, J. M. O.	Port Byron	Rock Island.
*Bumstead, J. E.	Dundee	Kane.
Burke, Charles	Bloomington	McLean.
*Burnham, A. F.	Ashland	Cass.
*Byford, H. T.	Chicago	Cook.
*Caldwell, W. S	Freeport	Stephenson.
Caldwell, Chas	Chicago	Cook.
*Campbell, J. Y.	Paxton	Ford.
Carter, C. G.	Rock Island	Rock Island.
*Carter, J. M. G.	Waukegan	Lake.
Cashburn, R. L.	Carthage	Lake.
*Casselberry, W. E.	Chicago	Cook.
Chamberlin, G. M.	Chicago	Cook.
Chapman, H. W.	Whitehall	Greene.
*Chenoweth, C.	Decatur	Macon.
*Chenoweth, W. J.	Decatur	Macon.
*Chewning, J.	Wenona	Marshall.
*Chewing, J. P.	Millersburg	Mercer.

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*Church, N. H.	Chicago.	Cook.
*Clark, W. E.	Chicago.	Cook.
*Cole, W. C.	Jacksonville.	Morgan.
*Coleman, W. F.	Chicago	Cook.
*Colburn, J. E.	Chicago	Cook.
Collins, J. S.	Chesterfield.	Macoupin.
*Conibear, W. H.	Morton	Tazewell.
*Cook, E. P.	Mendota.	La Salle.
*Corr, A. C.	Carlinville.	Macoupin.
Corr, L. H.	Carlinville.	Macoupin.
*Cotton, A. C.	Chicago.	Cook.
*Coulter, J. H.	Peoria.	Peoria.
Cowan, G. R.	Girard.	Macoupin.
Cowan, J. M.	Hennepin.	Putnam.
*Cowden, J. W.	Rock Island.	Rock Island.
Cozad, James	Reynolds.	Rock Island.
Craig, G. C.	Rock Island.	Rock Island.
*Crane, W. W.	Sinclair.	Morgan.
Crawford, S. K.	Chicago	Cook.
Crow, J. T.	Carrolton	Greene.
Cullimore, T. M.	Jacksonville.	Morgan.
*Curtis, Lester	Chicago.	Cook.
*Curtis, R. M.	Union.	
Dalton, W. B.	Scottville.	Macoupin.
*Danforth, I. N.	Chicago	Cook.
*Davis, C. E.	El Paso	Woodford.
*Davis, N. S.	Chicago	Cook.
*Davis, N. S. Jr.	Chicago	Cook.
Davison, J. B.	Moline.	Rock Island.
Deal, J. B.	Riverton	Sangamon.
*Dewey, R.	Kankakee.	Kankakee.
*DeWitt	Hampshire.	Kane.
DeWolf, O. C.	Chicago.	Cook.
*Dicus, J. F.	Streator.	La Salle.
Dobbin, A. S.	Chicago	Cook.
Donaldson, H. C.	Morrison	Whiteside.
*Dougall, Wm	Joliet	Will.
Douglas, D. T.	Colfax.	McLean.

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*Doyle, M. R.	Rosemond	Christian.
Drew, A. M.	Weldon	DeWitt.
Du Hadway, C.	Jerseyville	Jersey.
Dunn, L. D.	Moline	Rock Island.
Dyas, G. K.	Chicago	Cook.
*Dyer, R. F.	Ottawa	La Salle.
*Earle, C. W.	Chicago	Cook.
*Earle, F. B.	Chicago	Cook.
Eldridge, F. P.	Greenview	Menard.
*Engert, Rosa H.	Chicago	Cook.
Ensign, W. O.	Rutland	La Salle.
*Ermine, L. E.	Chicago	Cook.
Etheridge, J. H.	Chicago	Cook.
*Evans, C. W.	Chicago	Cook.
*Evans, J. W.	Varna	Marshall.
Eyster, Geo. L.	Rock Island	Rock Island.
*Fenger, C.	Chicago	Cook.
Ferry, L. A.	Eureka	Woodford.
Fiegenbaum, E. W.	Edwardsville	Madison.
Fiegenbaum, J. H.	Alton	Madison.
Fink, I. W.	Hillsboro	Montgomery.
Fish, W. H.	Baylis	Pike.
*Fisher, J. C.	Elkhart	Logan.
Fischer, C. C. J.	Carlinville	Macoupin.
Fitch, T. D.	Chicago	Cook.
Fletcher, Jos.	Mendon	Adams.
*Foster, A. H.	Chicago	Cook.
*Frank, Jacob.	Chicago	Cook.
*Freeman, J. A.	Millington	Kendall.
Galt, Thos.	Rock Island	Rock Island.
Garrott, E.	Chicago	Cook.
*German W. H.	Morgan Park	Cook.
*Gardner, E. J.	Chicago	Cook.
*Goble, E. T.	Earlville	La Salle.
*Goodbrake, C.	Clinton	De Witt.
*Goodell, W. L.	Effingham	Effingham.
*Goodman, H.	Chicago	Cook.

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*Goldspohn, A.	Chicago	Cook.
*Graham, D. W	Chicago	Cook.
*Gray, J. L	Chicago	Cook.
Grayson, W. H	Venice	Madison.
Griffith, B. M.	Springfield	Sangamon.
*Grim, A	Franklin Grove	Lee.
Guthrie, H. R	Sparta	Randolph.
Guttery, W. V	Middletown	Logan.
Hairgrove, J. W	Waverly	Morgan.
Hall, J. M	Chicago	Cook.
*Hallam, J. L	Centralia	Marion.
Haller, F. B.	Vandalia	Fayette.
*Hardy, H. T	Kaneville	Kane.
*Harris, B. H	Groveland	Tazewell.
*Hard, Chester	Aurora	Kane.
*Hardie, G. M	Chicago	Cook.
*Harsha, W. M	Oconee	Shelby.
Haskell, W. A	Alton	Madison.
Hatch, H.	Quincy	Adams.
Hawley, G. F	Chicago	Cook.
Hay, Walter	Chicago	Cook.
*Hayes, P. S	Chicago	Cook.
Haynes, Moses	Vandalia	Fayette.
Herriott, E. L	Jacksonville	Morgan.
*Heise, Ellen H	Canton	Fulton.
*Hoadley, A. E	Chicago	Cook.
Hoag, J. C	Chicago	Cook.
*Holder, J	Lanark	Carroll.
*Holderness, E. P. G	Chenoa	McLean.
Holliday, C. H	Carlinville	Macoupin.
Hollister, J. H.	Chicago	Cook.
Holmes, Nathan	San Jose	Mason.
Holmes, E. L.	Chicago	Cook.
Hooper, H.	Chicago	Cook.
*Hoornbeek, N. B	Youngstown	Warren.
*Hotz, F. C	Chicago	Cook.
*Hosmer, A. B	Chicago	Cook.
Hughes, N. J	Franklin	Morgan.

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*Hull, M. D.	Arrowsmith	McLean.
*Hunt, C. C.	Dixon	Lee.
*Hunter, Warren	Hampton	Rock Island.
Hurst, S. T.	Greenview	Menard.
Hyde, J. N.	Chicago	Cook.
*Ingals, E.	Chicago	Cook.
Ingals, E. F.	Chicago	Cook.
Isham, R. N.	Chicago	Cook.
Jackson, A. R.	Chicago	Cook.
*Jenks, D. S.	Plano	Kendall.
*Jennings, C. A.	Delavan	Tazewell.
Jones, G. W.	Danville	Vermillion.
Jones, L. G.	Jacksonville	Morgan.
Jones, H. H.	Jacksonville	Morgan.
Johnson, H. A.	Chicago	Cook.
*Johnson, F. S.	Chicago	Cook.
*Jump, D. W.	Plainfield	Will.
Keefer, Jno. F.	Sterling	Whiteside.
Kell, A. P.	Olney	Richland.
Kellogg, Helen R.	Chicago	Cook.
Kellogg, A. H.	Jacksonville	Morgan.
*Kelso, E. L.	Paxton	Ford.
Kendall, H. W.	Quincy	Adams.
Kiernan, J. G.	Chicago	Cook.
Kilgore, J. C.	Monmouth	Warren.
Kinkead, A. G.	Scottville	Macoupin.
*Knight, Mary C	Aurora	Kane.
*Kreider, Geo. N	Springfield	Sangamon.
Landon, W. M.	Golden	Adams.
*Le Due, E. H.	Anrora	Kane.
*Lee, A. M.	Quincy	Adams.
*Leeds, L. L	Lincoln	Logan.
Littlefield, H. H.	Beardstown	Cass.
*Little, Jehu	Bloomington	McLean.
Long, H. H.	Orion	Henry.
Long, L. L.	Toulon	Stark.

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*Loomis, E. B	Chicago	Cook.
*Lord, F. H	Plano	Kendall.
*Lydston, G. F	Chicago	Cook.
Lyford, W. H	Port Byron	Rock Island.
MacDonald, P. S	Chicago	Cook.
*Malone, L. A	Jacksonville	Morgan.
*Mansfield, W. A	Metamora	Woodford.
*Martin, F. H	Chicago	Cook.
*Martin, W. S	Tuscola	Douglas.
*Marshall, Ira E	Chicago	Cook.
Mathews, J. P	Carlinville	Macoupin.
*McArthur, L. L	Chicago	Cook.
McClanahan, H. M	Woodhull	Henry.
McClellan, R. A	Yorkville	Kendall.
*McCullough, J. R	Chicago	Cook.
McDermitt, S. T	Cowden	Shelby.
*McIlvaine, Thos. M	Peoria	Peoria.
*McIntyre, C. J	Chicago	Cook.
McKenzie, W. R	Chester	Randolph.
*McKinney, J. G	Barry	Pike.
McMann, W. W	Gardner	Grundy.
McNair, Sam'l	Elburn	Kane.
*McNary, W. H	Martinsville	Clark.
*McPherson, C. W	Hazelhurst	Whiteside.
McWilliams, S. A	Chicago	Cook.
*Mergler, Marie J	Chicago	Cook.
Mileham, Sam'l	Camp Point	Adams.
*Miller, D. W	Gilman	Iroquois.
*Miller, Jno. S	Peoria	Peoria.
*Miller, J. H	Oconee	Shelby.
*Miller, Katharine	Lincoln	Logan.
*Mitchell, R. J	Girard	Macoupin.
*Montgomery, E. B	Quincy	Adams.
*Montgomery, W. T	Chicago	Cook.
*Moon, O. W	Lockport,	Will.
Morgan, J. W	Port Byron	Rock Island.
*Moyer, H. N	Chicago	Cook.
Moyer, W.L	Butler	Montgomery.

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Mudd, W. A.	Athens	Menard.
*Murphy, J. B	Chicago	Cook.
Meyers, J. C	Clinton	DeWitt.
*Nash, A	Joliet	Will.
Nelson, D. T	Chicago	Cook.
*Nesbitt, G. W	Sycamore	DeKalb.
Nevill, F. A	Meredosia	Morgan.
*Newman, H. P	Chicago	Cook.
*Noble, C. M	McLean	McLean.
*Norbury. F. P	Jacksonville	Morgan.
Northcote, E. M	Sweetwater	Menard.
*Owens, J. E	Chicago	Cook.
*Oyler, P. H	Mt. Pulaski	Logan.
*Palmer, A. E	Morris	Grundy.
*Park, C	Oquawka	Henderson.
Parke, C. R	Bloomington	McLean.
*Parkes, C. T	Chicago	Cook.
*Parkhurst, F. J	Danvers	McLean.
Patterson, R. J	Batavia	Kane.
*Patton, J. M	Chicago	Cook.
Pegram, S. M	Manchester	Scott.
*Pettyjohn, E. S	Chicago	Cook.
*Pitner, T. J	Jacksonville	Morgan.
*Pitner, F. R	Clay City	Clay.
*Plummer, S. C	Rock Island	Rock Island.
Plummer, S. C., Jr	Rock Island	Rock Island.
Potts, J. F	White Hall	Greene.
Powell, A. M	Collinsville	Madison.
*Prince, A. E	Jacksonville	Morgan.
Prince, Jno. A	Jacksonville	Morgan.
Pratt, H. L	Elgin	Kane.
*Prune, L. H	Batavia	Kane.
*Rankin, A. C	Pullman	Cook.
*Rauch, J. H	Springfield	Sangamon.
Reed, N. S	Chandlerville	Cass.
Reece, M	Abingdon	Knox.

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Reed, C. C.	Lincoln	Logan.
Remsberg, J. L.	LaMoile	Bureau.
*Reynolds, A. R.	Chicago	Cook.
*Reynolds, H. J.	Chicago	Cook.
*Rhodes, J. E.	Chicago	Cook.
*Richards, A. S. D.	Chicago	Cook.
*Richardson, H. W.	Chicago	Cook.
*Rich, K. E.	Wenona	Marshall.
*Ring, Jno.	Chicago	Cook.
*Robbins, M. M	Aurora	Kane.
*Robinson, F. C.	Wyanet	Bureau.
*Robison, J. A.	Chicago	Cook.
*Rooney, A. F.	Quincy	Adams.
*Rooney, M.	Quincy	Adams.
*Root, E. H.	Chicago	Cook.
Roskoten, O. J.	Peoria	Peoria.
Roskoten, Robt.	Peoria	Peoria.
Ross, G. W.	Carrollton	Greene.
Rothstein, H.	Waterloo	Monroe.
Russell, F. H.	Bluff Dale	Greene.
*Rutherford, C.	Chicago	Cook.
Ryburn, J. L.	Ottawa	LaSalle.
Sargent, Sam'l	Lincoln	Logan.
*Schaefer, F. C.	Chicago	Cook.
*Schreibner, G. F.	West Brooklyn	Lee.
Schneck, J.	Mt. Carmel	Wabash.
*Seaman, M. W.	Shipman	Macoupin.
*Servoss, A. G.	Havana	Mason.
Seyler, J. H.	Preemption	Mercer.
Shipp, F. J.	Petersburg	Menard.
Silverthorn, L. L.	Charleston	Coles.
*Simmons, E. U.	Erie	Whitesides.
*Skeer, J. D.	Chicago	Cook.
Sibley, C. W.	Fairfield	Wayne.
*Slater, Catharine	Aurora	Kane.
*Sloan, W. K.	Moline	Rock Island.
Smith, C. F.	Danforth	Iroquois.
*Smith, Lee	Bloomington	McLean.

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Smith, C. G.	Chicago	Cook.
*Spear, J. W.	Mason City	Mason.
*Spear, L. E.	Shirley	McLean.
*Sprague, F. J.	Joliet	Will.
*Starkey, H. M.	Chicago	Cook.
*Starkweather, R. E.	Springfield	Sangamon.
*Steele, D. A. K.	Chicago	Cook.
*Stowell, J. H.	Chicago	Cook.
*Strong, A. B.	Chicago	Cook.
Stoskopf, Louis	Freeport	Stephenson
Studer, Jos.	Peoria	Peoria.
*Sweetland, W. M.	Highland Park	Cook.
*Taylor, F. G.	Ashland	Cass.
Thackary, W. T.	Chicago	Cook.
Thompson, L. G.	La con	Marshal
*Thompson, Mary H.	Chicago	Cook.
Thompson, P. C.	Jacksonville	Morgan.
*Tilley, Robt.	Chicago	Cook.
Todd, J. F.	Chicago	Cook.
Townsend, J.	Springfield	Sangamon.
Trout, W. A.	Atwater	Menard.
Truesdale, C.	Rock Island	Rock Island.
*Tweddale, Jas	Washburn	Woodford.
*Tyler, W. R.	Natrona	Mason.
*Vanderhoof, H. W.	Roselle	DuPage.
VanHorn, A. K.	Jerseyville	Jersey.
Verity, W. P.	Chicago	Cook.
Vertrees, C. M.	Murrayville	Morgan.
*Wallace, J. H.	Monmouth	Warren.
Walker, J. P.	Mason City	Mason,
Wakeley, T. A.	Jacksonville	Morgan.
*Ward, C. N.	Chicago	Cook.
*Ware, Lyman	Chicago	Cook.
*Waxham, F. E.	Chicago	Cook.
*Webster, G. W	Chicago	Cook.
Webster, J. R.	Monmouth	Warren.

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*Weis, E. W.	Ottawa	La Salle.
*Westcott, C. D.	Chicago	Cook.
Wetmore, A	Waterloo	Monroe.
*White, J. L.	Bloomington	McLean.
*Whitley, J. D.	Petersburg	Menard.
**Whitmire, J. S	Metamora	Woodford.
Whitmire, J. W	Forest	Livingston.
Whitten, T. J.	Nokomis	Montgomery.
*Wilcox, E. A	Minonk	Minonk.
*Wilcox, L. S	Champaign	Champaign.
Wilder. F. M	Chicago	Cook.
*Wiley, F. A	Earlville	La Salle.
Wiley, T. R	Gibson City	Ford.
*Will, O. B.	Peoria	Peoria.
*Windette, R. A	Aurora	Kane.
*Wing, E	Chicago	Cook.
*Wood, C. A	Chicago	Cook.
*Wright, Jno	Clinton	Cook.
Zenk, F. G	Troy	Madison

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DELEGATES IN ATTENDANCE.

Aurora Medical Society.

Freeman, J. A.....Millington. Knight, Mary C. .....Aurora.

Adams County Medical Society.

Montgomery, E. B.....Quincy. Rooney, M.....Quincy.
Rooney, A. B... Quincy.

Brainard District Medical Society.

Burnham, A. F .....Lincoln. Leeds, L. L.....Lincoln.
Dieffenbacher, P. L...Havana. Miller, Katharine.....Lincoln.
Fisher, J. C.....Lincoln. Servoss, A. G.....Havana.
Jennings, C. A.....Delavan. Tyler, W. R.....Natrona.
Whitley, James D ...Petersburg.

Chicago Medical Society.

Billings, Frank.....Chicago. Hotz, F. C.....Chicago.
Brower, Daniel R.....Chicago. Lydston, G. Frank....Chicago.
Brown, Moreau R.....Chicago. Marshall, Ira E..... Chicago.
Clarke, William E ....Chicago. Moyer, H. N..... ...Chicago.
Colburn, J. E.....Chicago. Prince, L. H.....Batavia.
Church, N. H. .....Chicago. Rhodes, John Edwin.. Chicago.
Earle, Frank B ..... Chicago. Reynolds, Arthur R....Chicago.
Frank, J..... .....Chicago. Rutherford, C.....Chicago.
Goldspohn, Albert.....Chicago. Starkweather, R. E.Springfield.
Graham, D. W.....Chicago. Starkey, Horace M....Chicago.
Hoadley, A. E.....Chicago. Steele, D. A. K .....Chicago.
Hollister, J. H .....Chicago. Stowell, J. H.. .....Chicago.
Hosmer, A. B.....Chicago. Waxham, Frank E....Chicago.
Hurlbut, V. L.....Chicago. Webster, G. W.....Chicago.
Ward, C. W....Chicago.

Chicago Pathological Society.

Andrews, Wells .....Chicago. Pettyjohn, Elmore S ..Chicago.
Brockway, Vira A.....Chicago. Patton, Joseph M ....Chicago.

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Danforth, I. N.....Chicago.
Ermine, Lucy E.....Chicago.
McCullough, J. R.....Chicago.
McIntyre, Charles J...Chicago.
Richards, A. S. D. ...Chicago.
Root, Eliza H.....Chicago.
Skeer, John D.....Chicago.
Wescott, Cassius D....Chicago.

Cook County Hospital.

Murphy, J. B....Chicago.

Champaign County Medical Society.

Doyle, M. R .....Rosemond.
Kreider, Geo. N....Springfield.
Miller, J. H.....Oconee.
Prince, A. E ... .Jacksonville.
Sparling, Wm. H....Moweaqua.

Fox River Valley Medical Society.

Bumstead, J. E.....Dundee.
Curtiss, R. M.....Union.
Pratt, H. L.....Elgin.
Richardson, H. W....Marengo.
Windette, R. A....Aurora.

Iowa and Central Illinois Medical Society.

Plummer, S. C....Rock Island.

Lake County Medical Society.

Carter, J. M. G....Waukegan.

Morgan County Medical Society.

Bremmer, H. A .....Merritt.
Cole, W. C.....Jacksonville.
Crane, W. W.....Sinclair.
Malone, L. A.....Jacksonville.
Norbury, Frank P....Jacksonville.

McLean County Medical Society.

Little, J.....Bloomington.
Parkhurst, F. J.....Danvers.
Spear, L. E....Shirley.

Military Tract Association.

Braunworth, Anna M. Monmouth.
Wallace, J. H. ....Monmouth.

Macoupin County Medical Society.

Corr, A. C..... ....Carlinville.
Mathews, J. P.....Carlinville.
Mitchell, R. J....Girard.

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North Central Medical Association.

Chewning, J.....Wenona.
Cook, E. H.....Mendota.
Davis, C. E.....El Paso.
Dicus, J. F.....Streator.
Evans, J. W.....Marshall.
Hunt, C. C.....Dixon.
Palmer, A. E.....Morris.
Taylor, T. J.....Ashton.
Tweddale, James...Washburn.
Weiss, E. W.....Ottawa.
Wilcox, E. A....Minonk.

Peoria City Medical Society.

Brown, James L.....Peoria.
Coulter, J. H.....Peoria.
Miller J. S....Peoria.

Post-Graduate Medical College.

Newman, Henry P....Chicago.
Parkes, Charles T.....Chicago.

Southern Illinois Medical Association.

Hallam, J. E....Centralia.

Southern Illinois District Medical Society.

Benson, N. J....Vienna.

State Insane Hospital (Eastern).

Dewey, R.... Kankakee.

Will County Medical Society.

Dougall, William..... Joliet.
Nash, A.....Joliet.
Sprague, James J., Jr....Joliet.

Wesley Hospital.

Earle, Charles Warrington....Chicago.

Chicago Charity Hospital.

Coleman, W. F....Chicago.

Whiteside County Medical Society.

Simmons, E. U....Erie.

Permanent Members (not Delegates) in Attendance.

Andrews, Edmund....Chicago.
Anderson, S. T...Bloomington.
Angear, J. J. M.....Chicago.
Jones, S. J.....Chicago.
Jump, D. W.....Plainfield.
Jenks, D. S.....Plano.

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Byford, Henry T.....Chicago.
Bridge, Norman.....Chicago.
Baxter, B. J.....Astoria.
Babcock, R. H. .....Chicago.
Brown, J. L.. .....Peoria.
Bishop, Seth S.....Chicago.
Brown, Sanger.....Chicago.
Barnes, A. T ....Bloomington.
Bettman, B.....Chicago.
Cowden, J. W....Rock Island.
Curtis, Lester.....Chicago.
Casselberry, W. E.....Chicago.
Craig, A. L.....Aledo.
Conibear, W. H.....Morton.
Campbell, J Y.....Paxton.
Caldwell, W. S .....Freeport.
Crawford, N. B .....Eureka.
Chewning, J. P....Millersburg.
Davis, N. S.....Chicago.
Dyer, R. F.....Ottawa.
DeWitt, R. R.....Hampshore.
Ensign, W. O.....Rutland.
Evans, C. W.....Chicago.
Engert, Rosa H.....Chicago.
Evans, J. W.....Varna.
Fitch, T. D.....Chicago.
Fenger, C..... .....Chicago.
Goble, E. T.....Earlville.
Goodbrake, C.....Clinton.
German, Wm. H. Morgan Park.
Goodman, H.....Chicago.
Gray, J. L.....Chicago.
Gradle, Henry.....Chicago.
Grim, Adam...Franklin Grove.
Hardy, H. T.....Kaneville
Heise, Ellen H.....Canton.
Hunter, Warren .... Hampton.
Hardie, G. M.....Chicago.
Johnson, H. A. .....Chicago.
Kelso, H. A.....Paxton.
Lee, A. L.....Quincy.
Leonard, R. L.....Chicago.
Loomis, E. Beach.....Chicago.
Lester, G. B.....Oswego.
Lichty, D ....Rockford
McMann, W. W.....Gardner.
McPherson, C. W..Hazelhurst.
Miller, D. W.....Gilman.
McKinney, J. G.... ...Barry.
McNary, W. H....Martinsville.
Moyer, H. N.....Chicago.
Martin, Franklin H...Chicago.
Mansfield, W. A....Metamora.
Moon, O. W.... ....Lockport.
McIlvaine, Thos. M....Peoria.
McArthur, L. L.....Chicago.
Martin, W. S.... ....Tuscola
Mergler, Marie J. ....Chicago.
Nesbitt, G. W.....Sycamore.
Noble, C. M .....McLean.
Oyler, P. H.....Mt. Pulaski.
Owens, John E.....Chicago.
Patterson, R. J.....Batavia.
Pitner, T. J.....Jacksonville.
Park, C.....Oquawka.
Robbins, M. M.....Aurora.
Rich, K. E.....Wenona.
Ring, John.....Chicago.
Reynolds, Henry J....Chicago.
Robison, J. A.....Chicago.
Rankin, A. C.....Pullman.
Rauch, John H....Springfield.
Robinson, F. C.....Wyanet.
Sloan, W. K.....Moline.
Slater, Catharine.....Aurora.
Smith, Lee.....Bloomington.

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Hoornbeck, N. B..Youngstown.
Hayes, Plym. S.....Chicago.
Harsha, W. M...Bloomington.
Hull, M. D.....Arrowsmith.
Haller, J..... ....Lanark.
Hardin, William.....Chicago.
Holderness, E. P. G...Chenoa.
Ingals, E. Fletcher,...Chicago.
Ingals, E.....Chicago.
Schreiber, G. F.....Maywood.
Schaefer, F. C.....Chicago.
Sweetland, W.M.Highland Park.
Tilley, Robert.....Chicago.
Wing, Elbert.....Chicago.
White, J. L..... Bloomington.
Wood, Casey A.....Chicago.
Wright, John.....Clinton.
Wiley, F. A.....Earlville.

Members by Invitation.

H. B. Hemenway, Kalamazoo, Mich. (Mich. State Med. Society.)
J. P. Chewning, Millersburg, Ill.
Avis Smith, Kansas City, Mo.
W. R. Cisna, Chicago, Ill. (Penn. State Med. Society.)
T. B. Moore, Colo. (Colo. State Med. Society.)
J. T. Miller, Holdredge, Neb. (Neb. State Med. Society.)

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THE

ILLINOIS STATE MEDICAL SOCIETY.

PROCEEDINGS

OF THE

FORTIETH ANNUAL MEETING,

HELD IN

CHICAGO, MAY 6TH, 7TH, 8TH, 1890.

FIRST DAY—MORNING SESSION.

The Society met in the First Methodist Episcopal Church, corner of Clark and Washington Streets, and was called to order by the President, Dr. John Wright, of Clinton, at 10 A. M.

Prayer was offered by the Rev. F. A. Noble, D. D., Pastor of the Union Park Congregational Church, Chicago.

Dr. Norman Bridge, on behalf of the local profession of Chicago, was called upon by the Chairman of the Committee of Arrangements for the address of welcome, and responded as follows:

Mr. President, Ladies and Gentlemen of the Society:—Hardly an address of welcome, and certainly not an oration, can be expected at this time from me; and I do not know that an address of welcome in the old-fashioned sense is entirely desirable. I am certainly glad, however, in behalf

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of that part of the profession of Chicago—and I am bound to believe it is a considerable part—that takes an interest in medical society matters, to say a word of welcome to the members of the Illinois State Medical Society gathered here this morning.

As you come in from a distance and see so few members gathered here among the tumult of a great and bustling city, it may easily seem as though the profession here takes very little interest, and as though the city takes no interest, in such a meeting as this. The city as a whole can hardly be expected to take an interest to any degree in such anniversaries as this, for there are occurring in one line or another of thought and interest nearly every week day the year through similar meetings in the city of Chicago. I heartily wish that a great many of the members of the profession who may perchance visit the Society and are not members might join it and take an active part in its discussions. I wish, in addition, that I could offer you the hospitality of the city. I wish it were in my power to do this. I may say, however, that a considerable portion of the medical profession of Chicago take an interest in matters of this kind, and does all in its power to build up, unify and strengthen the medical profession, and not least, the State Medical Society. You will see a goodly number of them at the different sessions of the Society at this meeting. I hope you will not measure the welcome that they extend to you by the entertainments that may be offered to the visiting members by the Committee of Arrangements. I would rather that your welcome may be measured by the interest that they take in the proceedings of the Society and the discussion on papers; by the part that they contribute to the work of the Society, which means its intellectual and moral dignity and growth.

It is most fit that I welcome you to that part of Chicago in which you have some moral and professional ownership—

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that is, Medical Chicago. Congress has recently given us permission to regard ourselves as a metropolis, as a great center. A center, to be creditable to the country, must be a center of learning. If Chicago is to be a metropolis, she must be a metropolis of learning, and this must be a medical metropolis, as well as a metropolis noted for its manufactures and distribution of goods, or of art, or any other thing. The profession of the State has an interest in these matters, larger than it can have in the purely material interests that pertain to any city. There must be four factors to constitute a complete medical center to-day, namely: Hospitals, medical schools, medical libraries and laboratories for the investigation of medical sciences. Chicago is blessed sufficiently, perhaps, with hospitals; many of them are very creditable. We invite you to visit them, to criticise them, and to exercise the function of a committee of visitation to help the management of these institutions towards elevating them, if they have not already reached it, up to the standard of highest perfection. Probably an aggregate of nearly two thousand beds exist in our hospitals. Some of them are managed as thoroughly and efficiently as any hospitals in the world. I am sure there is no better surgery done on the other side of the ocean than is done in some of the hospitals of Chicago.

As to the schools of the city, I perhaps had better be rather modest. We certainly have a large number of them, and I perhaps had better leave Dr. Rauch to say what sort of work they are doing. Some of them are not doing the best work. I hope those that are supplying members to this Society are doing fair work. There is no question that these schools are doing better work to-day than they have ever done before, and that each half decade in the recent past has shown progress forward.

A comprehensive medical library is one of the prominent factors that we must have to make this a great medical cen-

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ter. Unfortunately we cannot welcome you to such an institution now, but we hope to have the opportunity and pleasure to do so in the future. Our profession is fortunate in being able to say that the trustees of Newberry Library have recently determined to create a medical department. They have an abundance of funds with which to do it, and we know them well enough to be able to say that when they put their shoulders to that kind of a wheel they never turn back. I think it may safely be said that inside of a dozen years there will be in Chicago the largest and best medical library in the world, with the single exception of that at the National Capital. We cannot thank too much the trustees of the Newberry Library for the step they have taken.

I am sorry to say we cannot welcome you to a fourth factor that makes a great medical center. We have no worthy laboratories for original research. We have no endowment for such purposes for the future, and it is your privilege to criticise Chicago, to say: "You pretend to be a metropolis; you plume yourself on the fact that you are going to have the World's Fair and you are going to become the great city of the Western World; you have an extensive array of magnificent houses, factories, stores and a very fine art gallery, and lots of good schools, but you have not a dollar dedicated to original research." Such a criticism you can justly make, and we welcome and invite you to make it. There are dozens of men living in this city who are abundantly able out of their millions to found such institutions, but such men have not had it put into their hearts to undertake the step as yet. Let us hope and pray that some one may before long conceive it to be his duty and privilege to give us a great laboratory. We are waiting for that step; we can never become a perfect medical center until we can have institutions of that sort, thoroughly equipped, thriving and efficient.

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Ladies and gentlemen, we are certainly very glad to welcome you, individually and collectively, to this meeting, and we hope that your deliberations may not only be pleasant but profitable, and that you will resolve hereafter, those of you who live out of Chicago, to make this the chief vacation point of your lives; that you will often revisit the city and especially inspect, and profit by as you may, her medical institutions.

RESPONSE BY DR. T. J. PITNER, OF JACKSONVILLE.

Mr. President: In behalf of the physicians from outside of the city and members of the Illinois State Medical Society here assembled, I thank you, gentlemen of Chicago, for your hearty welcome as expressed in the able address of Dr. Bridge to which we have just listened, and as indicated on all sides by your cordial greetings this morning and by the extraordinary provisions which you have made for our entertainment whilst in your midst. Most of us have met with you before. We are glad to come again to renew our acquaintance; we are glad to come to the city of Chicago, in which we all take pride. It is not only the great city of Illinois, but is the exponent of the spirit of our people, the spirit of progress, of enterprise and of power. It quickens the pulse to walk your streets; it stimulates us to greater endeavor, and we shall return home stronger for having been with you.

We are glad to note in these few years the marvelous forward strides of your city. We were hardly prepared for all we see, although we have read much of it, and year by year noticed new evidences of growth.

We glory in the fact that not only as citizens but as physicians we can look forward to Chicago as our great center. We are glad to notice decided advances in the way of medical education, of greater requirements for graduation, of greater facilities for instruction and study, both clinical

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and pathological, afforded in this city. These are privileges that are open to us all, and the profession of the West alike. We are delighted with these advantages and we are pleased to have this opportunity to express ourselves. We are glad to meet you in these meetings always, here and elsewhere. We expect much of Chicago medical men. This Society is largely indebted to the steady support and active interest of Chicago physicians and this may be observed through all our transactions.

We are here to advance the science and art of medicine, and I am sure every one present to-day is imbued with that object, and that alone. The spirit of fraternity manifested by your cordial welcome this morning gives greater zest for the transaction of our business and scientific work. It is good to know that we are brethren and have common sympathies and interest, and what each one does is appreciated and recognized by the others. We shall carry home with us pleasant recollections from this meeting, as well as the great gain from having been with you, and earnestly wish that when we meet at distant parts of the State, you will lend us your presence and aid. Wherever we may perchance meet, you will there receive as cordial a welcome as you have given us to-day. We hope that this Society will continue to receive your attention and support, and that it may enlarge its usefulness. Again we thank you most heartily for your very sincere and cordial welcome.

The President called for a report from the Committee of Arrangements.

Dr. C. W. Earle, the Chairman of the Committee, reported as follows:

Hours for assembling 9 o'clock, A. M. and 2 P. M. For adjourning, 12:30 and 6 P. M.

The non-resident members of the Society are invited to meet at Kinsley's this evening, immediately after adjournment, for lunch, given by the Post Graduate School.

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On Wednesday at one o'clock, Dr. C. T. Parkes invites all members of the Society to lunch at Kinsley's.

The local profession, through your committee, has provided for a dinner party at the Auditorium Hotel at 6 o'clock Wednesday evening, and for a theatre party at McVicker's, immediately after. All members are invited to these entertainments, and can procure tickets at the Registration table.

The program offered for to-day is as follows:

Report of the Committee on Practical Medicine, Dr. J. M. G. Carter, Chairman.

Volunteer Paper by Dr. G. F. Lydston on "The Relation of Evolution to the Problem of Infectious Diseases."

Afternoon Session.

1. The President's Annual Address.
2. Report of the Committee on Revision of the Constitution.
3. Paper on Diagnosis of "Typhoid Fever," by Dr. J. H. Wallace.
4. Report of Special Committee on Diseases of Children, Dr. Katharine Miller and Dr. R. J. Mitchell.

Evening Session at eight o'clock.

Paper by Dr. E. Ingals on "What shall we do with our Insane of Illinois?" To be followed by eminent Specialists and Jurists. The public are invited to hear this paper and discussion.

The Committee has a number of volunteer papers on hand which will be announced with the other papers and reports in printed programs Wednesday and Thursday mornings.

Dr. D. W. Graham moved that the report of the Committee of Arrangements be adopted. The motion was seconded and carried.

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The next order of business was the report of the Committee on Practical Medicine. Dr. J. M. G. Carter, of Waukegan, Chairman, read a Paper on the "Causes and Treatment of Pneumonia."

President Wright invited all the Ex-Presidents of the Society who were present to take seats on the platform.

Dr. G. Frank Lydston, of Chicago, read a volunteer paper on the "Relation of Evolution to the Problem of Infectious Diseases."

The two papers were discussed by Drs. Bridge, Hollister, H. A. Johnson, Kreider, and discussion closed by Dr. Lydston, after which they were referred to the Committee on Publication.

Dr. C. W. Earle then introduced Dr. H. B. Hemenway, of Kalamazoo, Michigan, as a delegate from the Michigan State Society.

Dr. Hemenway said: I take great pleasure in coming here to meet the members of the Illinois State Medical Society, and I can express to you the hearty good-fellowship of your brethren across the lake. We hope that you will do as you have done in one or two instances in the past—send to us a delegate. We can accomplish much good by an interchange of views. By coming here I can see wherein you are working in a superior manner to our own Society, and as you visit us we hope you will find in some particulars that we are doing better work than you are. I wish you success in your present meeting and hope that our fellowship will continue.

Dr. Graham moved that Dr. Hemenway be made a member by invitation. Carried.

The Secretary then read letters from Drs. Booth, Eyster and Will, in which they expressed their regrets at their inability to be present, and conveyed their best wishes for the success of the meeting.

Adjourned till 2 o'clock.

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FIRST DAY—AFTERNOON SESSION.

The Society re-assembled at 2 P. M., and was called to order by the President.

Dr. Earle, for the Committee of Arrangements, stated that the first order of business was the Annual Address by the President.

Dr. W. O. Ensign, of Rutland, then took the chair and President Wright proceeded to deliver his Annual Address.

On motion, the President's Address was referred to the Committee on Publication.

The Report of the Committee on Revision of the Constitution was called for, Dr. Thomas M. McIlvaine, Chairman.

Dr. E. P. Cook stated that the Committee desired a little more time.

It was moved that the Committee be granted further time, and, if possible, to report later in the afternoon, or as the first order of business Wednesday morning. The motion was seconded and carried.

Dr. J. H. Wallace read a paper entitled "Diagnosis of Typhoid Fever," which, after being discussed by Drs. Carter and N. S. Davis, was referred to the Committee on Publication.

The report of the Special Committee on Diseases of Children was called for, and Dr. Katharine Miller, of Lincoln, a member of the Committee, read a paper entitled "Vaginal Irritation as a Cause of Bladder Symptoms in Young Girls."

The paper was discussed by Drs. Goodbrake and Carter, and then referred to the Committee on Publication.

The Secretary read a communication from the Illinois Pharmaceutical Association which stated that three delegates had been sent to the Society in the persons of Mr. D. R. Dyche, L. C. Hogan and H. C. Porter, and extending the good wishes of the Association to the Society.

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On motion, these gentlemen were made members by invitation.

Dr. Robert Tilley, of Chicago, read a paper entitled "Four Cases of Disease of the Mastoid," which was referred to the Committee on Publication without discussion.

The report of the Committee on Revision of the Constitution was next read by the Chairman, Dr. T. M. McIlvaine, of Peoria.

The report was discussed by Drs. Davis, Graham, Ensign, Freeman, McIlvaine, Johnson and Pitner, and was adopted section by section as far as read by the Chairman. It now being time for adjournment, the remainder of the report was, on motion, made the first order of business Wednesday morning.

Dr. Earle moved that Drs. J. T. Miller, of the Nebraska State Medical Society, T. B. Moore, of the Colorado State Medical Society, and J. P. Chewning, of Millersburgh, Ill., be made members by invitation. Carried.

Dr. Earle stated that immediately after adjournment lunch would be tendered to the visiting members of the Society by the Faculty of the Post-Graduate Medical School of Chicago.

On motion, the Society adjourned to meet at 8 P. M.

FIRST DAY—EVENING SESSION.

The Society re-assembled, pursuant to adjournment, at 8 P. M., and was call to order by the President.

On motion of Dr. Earle, Dr. Avis Smith, of Kansas City, Mo., was made a member by invitation.

The subject of the evening, "What Shall We do with Our Insane?" was opened by a paper by Dr. E. Ingals, of Chicago.

The subject was then discussed at length by Dr. R. J. Dewey, of Kankakee, Judge Prendergast, of Chicago, Dr.

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Corbus, of Ottawa, Dr. Sanger Brown, of Chicago, and Dr. D. R. Brower, of Chicago.

The papers and discussion were referred for publication.

Dr. D. W. Graham read some resolutions relating to the subject under discussion which he said he would offer for adoption at a later stage in the proceedings.

On motion, the Society adjourned to meet at 9:00 Wednesday morning.

MAY 7TH—SECOND DAY—MORNING SESSION.

The Society was called to order by the President at 9 A. M.

Dr. Earle, Chairman of the Committee of Arrangements, made further announcements. He stated that after adjournment at noon the Society would repair to Kinsley's, where a lunch would be tendered by Dr. Charles T. Parkes, of Chicago.

The remainder of the report of the Committee on Revision of the Constitution was read by the Chairman, Dr. T. M. McIlvaine, and considered by sections.

Dr. J. P. Mathews moved that the report of the Committee be adopted as a whole. The motion was seconded by Dr. Kreider.

Dr. J. Little offered an amendment that the report be laid over for action until the next annual meeting, according to the provisions of the constitution, as he understood that no amendments could be offered and adopted at the same meeting.

Dr. W. O. Ensign said that while he was opposed to the original motion on the ground of its being unconstitutional, yet he hoped definite action in the matter would be taken, as it had occupied much of the time of the Society for the past two years.

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Dr. Kreider remarked that the report could hardly be considered in the light of amendments to the constitution, but a revision of it. The Society instructed the Committee what to do, and they have done their work, and it was for the Society to adopt or reject the report.

Dr. Graham claimed that the motion to adopt finally is not unconstitutional, and that the motion to postpone for a year is based on a lack of information, inasmuch as the amendments offered by the Committee and separately approved by the Society, are substantially the same as those offered a year ago, and printed in the proceedings of the last annual meeting.

If these new sections and amendments were printed where they are supposed to belong in the old constitution, we could all see that there is a good deal of work to be done yet before we ought to adopt as a whole. Moreover, the Committee was instructed to prepare a new set of by-laws which it has not presented yet. The old by-laws were of the "crazy quilt" order—full of incongruities, confliction and impracticable provisions. Final adoption ought to be deferred till the Committee can complete its work—say till to-morrow morning. The new sections and amendments ought be printed along with the old parts of the constitution and by-laws where they belong so that every member could see for himself, and know what he is voting for when he votes for adoption as a whole.

The amendment to the motion, as offered by Dr. Little, was put and lost.

Dr. Mathews asked Dr. Graham to put his suggestion in the form of a motion.

It was then moved and seconded that the Committee, with the assistance of the Secretary, be instructed to have the constitution printed with the amendments in their proper places; that copies be distributed to the members this even-

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ing before adjourning, and that the question of adoption as a whole be laid on the table to be called up Thursday for final action.

Dr. Kreider said he could fully agree with Dr. Graham that the Society should either revise the present by-laws or have new ones drawn up, and he would offer an amendment that that be done.

Dr. McIlvaine said that the by-laws could be amended, repealed or added to at any meeting.

Dr. Graham said he would accept the amendment of Dr. Kreider, that the Committee be instructed to have printed with the completed constitution a new set of by-laws The motion was then carried.

Dr. Earle moved that a recess of five minutes be taken to allow members of the different County Medical Societies to name their delegates for representation on the Nominating Committee, and to report the names to the Secretary.

It was so voted.

On reassembling, the following was announced as the Nominating Committee:

Clark	County	W. H. McNary.
Cook	"	A. B. Strong.
DeWitt	"	C. Goodbrake.
DuPage	"	H. W. Vanderhoof.
Fulton	"	A. J. Baxter.
Henderson	"	C. Park.
Iroquois	"	D. W. Miller.
Kane	"	Chester Hard.
Kendall	"	J. A. Freeman.
Lake	"	W. M. Sweetland.
LaSalle	"	E. P. Cook.
Lee	"	Adam Grim.
Logan	"	K. Miller.
Macoupin	"	R. J. Mitchell.

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Marshall	County	J. W. Evans.
Mason	"	A. G. Servoss.
Menard	"	J. D. Whitley.
Mercer	"	J. P. Chewning.
Montgomery	"	I. W. Fink.
Morgan	"	W. C. Cole.
McHenry	"	H. W. Richardson.
McLean	"	J. Little.
Peoria	"	J. S. Miller.
Pike	"	J. G. McKinney.
Rock Island	"	Warren Hunter.
Sangamon	"	Geo. N. Kreider.
Scott	"	H. A. Bremmer.
Shelby	"	J. H. Miller.
Tazewell	"	W. H. Conibear.
Warren	"	J. H. Wallace.
Will	"	Thomas Sprague.
Woodford	"	C. E. Davis.

The President called for the report of the Committee on Surgery, which was read by the Chairman, Dr. F. C. Schaefer, of Chicago.

Dr. J. A. Freeman, of Yorkville, a member of the Committee, read a paper on "Harrison's Operation for Enlarged Prostate Gland."

Dr. Geo. N. Kreider, of Springfield, another member of the Committee, read a paper entitled, "The Surgical Treatment of Diseases Formerly Treated by Medication Only."

These three papers were referred to the Committee on Publication.

Dr. Schaefer, the Chairman of the Committee, announced the following assignments of topics for discussion in Surgery, stating that each paper or speaker would not occupy more than five minutes:

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I. Malignant Diseases of the Rectum.

1. Clinical Diagnosis, - - Dr. D. W. Graham.
2. Microscopical Diagnosis, - - Dr Lester Custis.
3. Indications for Palliative Treatment, - - - - - - Dr. E. P. Cook, Mendota.
4. Palliative Treatment, - - Dr. J. R. Corbus.
5. What are the Palliative Operations and their relative merits? Dr. C. Truesdale, Rock Island.
6. What are the radical operations and their relative merits? - - - Dr. J. E. Owens.
7. What are the comparative results of Palliative and Operative Treatment? - - - - - - Dr. Christian Fenger.

II. Senile Prostatic Enlargements.

1. Illustrated description, - Dr. Edmund Andrews.
2. What are the recognized methods for removing Prostatic obstructions? - Dr. C. Chenoweth.
3. Indications for supra-pubic and perineal method of approaching the Prostate for operation, - - - Dr. A. E. Hoadley.
4. Results of operation for the removal of Prostatic obstruction, - - Dr. A. B. Strong.

III. Renal Calculus.

1. Diagnosis, - - - - Dr. I. N. Danforth.
2. Operation, - - - - Dr. J. Frank.

IV. Penetrating Wounds of the Abdomen.

1. Indications for opening the Abdomen in cases of penetrating wounds, - - - - Dr. Herbert Judd, Galesburg.
2. What is to be done with a wounded Kidney and Ureter? - - - Dr R. N. Isham.
3. What is the best recognized method for suturing wounded Intestines? - - - - Dr. W. S. Caldwell, Freeport.

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V. PERITYPHLITIS.

1. Diagnosis, - - - - Dr. E. W. Lee.
2. Palliative Treatment, - - Dr. Frank Andrews.
3. When to operate, - - Dr. J. B. Murphy.

VI. TREATMENT OF WOUNDS.

1. What is the relative value of the different suture materials, - - - Dr. D. A. K. Steele.
2. What is the best method for preserving the different suture materials until required for use? - - - - - Dr. E. W. Andrews.
3. What is the best method of to-day for preventing infection of operative wounds? - - - - - Dr. L. L. McArthur.

With few exceptions, these gentlemen responded to their names when called and occupied the time allotted to them.

A general discussion followed on the above subject, which was participated in by Drs. H. A. Johnson, A. B. Strong, Henry T. Byford, D. A. K. Steele, J. W. Cowden, of Rock Island, E. W. Lee, A. F. Rooney, of Quincy, J. A. Freeman, of Yorkville.

On motion, Dr. L. C. Waters, of Richmond, Ill., was made a member by invitation.

Dr. H. A. Johnson introduced Librarian W. F. Poole, LL.D., of the Newberry Library, at this juncture.

Dr. Poole said: The Newberry library has been founded on a large fund, amounting to between $2,000,000 and $3,000,000. The Trustees of the Library desire to conduct it in a way most profitable to not only the people of Chicago, but of the State. Among the departments which they propose to start and to support is a medical library. Many attempts have been made in this city to establish a medical library, but none have been successful. They have all been

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temporary and soon passed away. It is the intention, I believe, to unite all the small medical libraries into one reference medical library, and this is to be under the auspices of the Newberry Library. The Trustees of this Library propose to put a considerable proportion of their large funds into this medical library and make it a first-class one, which will not only be open to the physicians of Chicago, but to those of the State. Hence it has been deemed proper to bring the matter before your State Society. It is the aim of the Trustees to have the first-class medical serials to form the basis of such a collection, to get the best medical works by the most eminent authors at any expense, so that this department may attract the attention of not only the profession in this country, but also abroad. These medical books will be kept in separate rooms; that is, they will not be mixed with other books, and the reading rooms for physicians will be entirely separate from the others. In this department will be found all the leading periodicals relating to your profession. We propose to secure a large number of foreign medical periodicals for this department. We intend, also, to have a committee, composed of the best medical men in the city, appointed to give the Trustees and the Librarian their advice as to what books they need. The Trustees desire not only to furnish you with all the information you may need, but they further desire the sympathy, support and co-operation of the entire medical profession of the State. Let every individual physician send us his monographs and special treatises and we will bind them and make a catalogue of them, so that future reference to such works can be easily and promptly made. If there is any gentleman in the State who desires a set of books and cannot procure them, let him write to us and we will try to get them. In this way we hope to be able to build up a large and valuable, rather than an ornamental, medical library. Tell us what you want, and

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if you do not eventually have a good medical library in this city, the medical profession should be held responsible for it.

On motion, a formal vote of thanks was tendered the trustees of the Newberry Library, for what they have done and determined to do to create a Medical Reference Library in Chicago, and especially to Dr. Poole for his presentation of the matter to the Society this morning.

The Society pledged its co-operation to the fullest extent possible.

On motion, the Society adjourned until 2 P. M.

SECOND DAY—AFTERNOON SESSION.

The Society re-assembled at 2 o'clock, President Wright in the chair.

The discussion an Surgery was resumed and concluded.

Dr. F. E. Waxham, of Chicago, exhibited two children wearing intubation tubes for pseudo-membranous stenosis of the larynx. He made remarks on the method of introducing and removal of the tube, and demonstrated to the Society both procedures.

The Secretary read a letter from the Non-Partisan Woman's Christian Temperance Alliance, in which they expressed their sympathy with the views on temperance given in the annual address of President Wright.

Dr. Davis moved that the communication be received and placed on file. Carried.

The report of the Committee on Obstetrics was called, but postponed temporarily.

The Special Committee on Laryngology, Dr. W. E Casselberry, was called, but was not present.

On motion, the Society adjourned to meet at 9 o'clock Thursday morning.

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MAY 8TH—THIRD DAY—MORNING SESSION.

The Society was called to order at 9 A. M. by the President.

On motion of Dr. Earle, the committees which did not report Wednesday were called in their order.

Dr. S. S. Bishop, of Chicago, read a volunteer paper on "Menthol in the Treatment of the Air Passages."

The paper was discussed by Dr. E. F. Ingals, and discussion closed by the essayist.

Dr. E. F. Ingals read a paper on "Stricture of the Œsophagus."

The paper was referred to the Committee on Publication.

On motion of Dr. Earle, Dr. Wm. R. Cisna, member of the Pennsylvania State Medical Society, now of Chicago, was made a member by invitation.

Dr. John E. Rhodes, of Chicago, read a paper on Anosmia, which was referred to the Committee on Publication without being discussed.

The report of the Committee on Obstetrics was now called for, and was read by its Chairman, Dr. J. S. Miller, of Peoria.

Dr. Banjamin H. Harris, of Groveland, another member of the committee, read a paper entitled "The Logic of Progressive Midwifery."

Dr. Lucinda H. Corr, of Carlinville, also contributed a paper on "The Pathology and Therapeutics of the Puerperal and the Parturient State."

The three papers were referred to the Committee on Publication without being discussed.

Dr. William E. Casselberry, the Special Committee on Laryngology, read a paper on "Adenoid Hypertrophy of the Naso-Pharynx."

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This paper was discussed by Drs. Gradle, C. E. Webster, and discussion closed by the author of the paper, after which it was referred to the Committee on Publication.

Dr. E. Ingals moved that the Society proceed to the subject of revision of the Constitution. The motion was seconded and carried.

Dr. McIlvaine said he finished reading the report yesterday when the Society adjourned.

Dr. E. P. Cook moved the adoption of the Constitution and By-Laws as printed, with instruction to the Chairman of the Committee on Revision and the Secretary of the Society to correct any errors of verbiage, and to make such changes as may be necessary to make the new and the old provisions of the Constitution and By-Laws harmonize.

Dr. Graham said if so instructed he would do his best, but it would be found considerable of a task. The committee, with two years' effort, should have been able to do this.

Dr. Cook's motion was seconded and carried.

Dr. Truesdale offered the following, and moved its adoption:

Resolved, That a committee of five members be appointed to consider the changes to be made in the present Medical Practice Act to better secure to the profession and people the benefits intended by it; and to secure the needful legislation to amend and improve it, and to consider what changes should be made in the present law to obtain more complete vital statistics, said committee to report at the next meeting of the Society. Seconded and adopted.

The President subsequently announced the Committee as follows: Drs. C. Truesdale, Rock Island; F. B. Haller, Vandalia; D. W. Graham, Chicago; T. M. McIlvaine, Peoria; George R. Cowan, Girard.

The Committee on Nominations then made its report through the Chairman, Dr. J. S. Miller, of Peoria, which after some changes, was adopted, as follows:

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Your committee beg leave to report the following nominations for your consideration:

President—J. P. Matthews, Carlinville.
First Vice-President—Charles C. Hunt, Dixon.
Second Vice-President—Frederick C. Schaefer, Chicago.
Permanent Secretary—David W. Graham, Chicago.
Treasurer—Thomas M. McIlvaine, Peoria.
Assistant Secretary—George N. Kreider, Springfield.

Section on Practice of Medicine.—President—William O. Ensign, Rutland. Secretary—Thomas J. Pitner, Jacksonville.

Section on Surgery, Surgical Specialties and Obstetrics.—President—Otho B. Will, Peoria. Secretary—Lewis L. McArthur, Chicago.

Section on Etiology, Preventive and State Medicine—President—B. M. Griffith, Springfield. Secretary—J. H. Miller, Oconee.

Address on Etiology and State Medicine.—Ephraim Ingals, Chicago.

Biographical Committee.—J. H. Hollister, Chicago.

Address on Surgery.—Chas. T. Parkes, Chicago.

Address on Practice of Medicine.—Norman Bridge, Chicago.

Judicial Council.—S. C. Plummer, Rock Island; J. L. White, Bloomington; J. L. Hallam, Centralia, in place of those whose term expires with this year.

Local Committee of Arrangements.—B. B. Griffith, J. A. Prince, Walter Ryan, F. L. Matthews, R. E. Starkweather.

Committee on Necrology.—E. Ingals, Robt. Boal, J. H. Rauch.

Committee on Publication.—D. W. Graham, T. M. McIlvaine, G. N. Kreider.

It is also recommended that the Chairman and Secretary of their respective sections be empowered to fill any vacancy which may occur in the list of addresses.

The report of the Committee on Gynecology was called for, and was read by the Chairman, Dr. L. A. Malone, of Jacksonville.

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Dr. Mary H. Thompson, of Chicago, a member of the committee, read a paper entitled "A Few Interesting Cases in Gynecology."

Dr. Eliza H. Root, of Chicago, contributed a volunteer paper on "Constipation and its Relation to Pelvic Disorders in Young Women."

These papers were referred to the Committee on Publication without discussion.

On motion, the Society adjourned till 2 P. M.

THIRD DAY—AFTERNOON SESSION.

The Society met at 2 P. M. and was called to order by the President.

Dr. Ellen H. Heise, of Canton, a member of the Committee on Obstetrics, read a paper on "The Prevention of Puerperal Mastitis," which was referred to the Committee on Publication without being discussed.

At this juncture, by a vote of the Society, Dr. D. A. K. Steele exhibited a patient upon whom he had operated for osteosarcoma of the right scapula.

The next thing in order was the report of the Committee on Drugs and Medicines, Dr. J. A. Robison, of Chicago, Chairman.

Dr. Robinson took for his subject "The Treatment of Phthisis Pulmonalis"

This paper was discussed by Drs. E. F. Ingals and H. A. Johnson, and then, on motion, referred for publication.

Dr. Jacob Schneck, of Mt. Carmel, contributed a paper on Catalpa Speciosa.

Dr. C. E. Davis, of El Paso, also a member of the committee, read a paper on "Opium in Disease."

On motion, these papers were referred for publication.

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The report of the Committee on Ophthalmology and Otology was called for. Dr. Tilley, a member of this committee, had read his paper at a previous session. The other members failed to report.

Dr. F. C. Hotz, of Chicago, read a volunteer paper on "The Relation of Eye Strain to Headache and other Nervous Affections."

Dr. E. J. Gardiner, of Chicago, read a paper on "Correction of Slighter Forms of Astigmatism."

Dr. A. E. Prince, of Jacksonville, presented a paper on the "Treatment of Posterior Turbinated Hypertrophy," which was read in abstract by the Secretary.

Dr. M. R. Brown, of Chicago, read a paper entitled "Empyema of the Antrum of Highmore."

A paper by Dr. R. J. Mitchell, of Girard, on "Diphtheria," was read in abstract by the Secretary.

All of the above papers were referred to the Committee on Publication without being discussed.

The Secretary, as chairman of the Committee on Publication, then made the following report for the committee:

REPORT OF COMMITTEE ON PUBLICATION.

The yearly account of the Treasurer has been audited, and is herewith submitted as required by the Constitution. (The receipts at this meeting, amounting to $860, not included).

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THE TREASURER'S ACCOUNT.

Thos. M. McIlvaine, Treasurer,

In account with the Illinois State Medical Society.

1889.		Dr.	Cr.
May 23.	To balance in Treasury	$ 500 32	
	Receipts of Jacksonville Meeting	615 00	
1890.			
May 5.	Receipts from members	183 00	
" 5.	" " "	30 00	
" 5.	" " " through the Sec.	65 00	
" 5.	" " "	8 00	
1889.	Voucher.		
June 24.	By Stenographer's bill (1)		$ 82 50
July 7.	Appropriation for Secretary (2)		50 00
" 7.	Secretary's postage account (3)		40 00
Aug. 20.	D. W. Graham, extra clerical work as chairman of Committee on Publication (4)		50 00
" 20.	Jameson & Morse Co., Printing Transactions 1889 (5)		472 37
" 20.	Chicago Photo-Graveur Co., four portraits of deceased members (6)		61 40
" 20.	Appropriation for Treasurer (7)		50 00
1890.			
May 1.	Treasurer's postage (8)		5 60
" 5.	Printing for Treasurer		5 25
" 5.	Exchange		70
" 5.	Cash on hand (certified check)		583 50
		$1,401 32	$1,401 32

Examined and found correct.

D. W. Graham, *Permanent Secretary.*
Lyman Ware, *Assistant Secretary.*

The Jameson & Morse Company, being the lowest bidder, was awarded the contract for publishing the Transactions for the last year. The total cost of printing, binding and wrapping was $472.37 for the 360 volumes of 448 pages each. The photo-graveur portraits of four deceased members for the report on Necrology cost $61.40 additional. The books were delivered to the committee and distributed to such members of the Society as were entitled to receive them August 20, 1889.

A copy was sent to each of the Illinois State charitable institutions, to all public medical libraries, and to other State

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medical societies in exchange. Two copies were sold for $2 a volume. Some 40 or 50 copies are due to members who have paid their dues for the last year within the last week. Number of copies remaining, about 60.

D. W. Graham,
Thos. M. McIlvaine,
Lyman Ware,
} *Com. on Publication.*

On motion, the report was adopted and referred for publication.

Dr. E. Ingals then read the report of the Committee on Necrology, as follows:

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NECROLOGY.

DAVID PRINCE, M. D.

Dr. David Prince was born in Brooklyne, Windom County, Conn., June 21, 1816. Later, he removed with his parents to Canandaigua, N. Y., where he was educated at the Academy. Then he began the study of medicine at the College of Physicians and Surgeons, New York, and completed it at Ohio Medical College, at Cincinnati. At the latter city, he assisted for a year and a half the distinguished surgeon Dr. Muzzy. His father, who was a farmer by occupation, had meanwhile removed to Payson, Ills., and there his son came, after leaving Cincinnati, and began the practice of his profession. In 1843, he removed to Jacksonville, and for five years was Professor of Anatomy in Illinois Medical College. This institution only lived a few years, but Dr. Prince's connection with it served to give him extended reputation as a bold and successful surgical operator. For three years he practiced at St. Louis, and delivered a course of lectures on surgery at the St. Louis Medical College. In 1852, he returned to Jacksonville. Fifteen years later, he established the Sanitarium, which has ever since enjoyed uninterrupted prosperity and an extended reputation, and has proved invaluable to hundreds of patients who have been treated there. Dr. Prince paid especial attention to surgery, and became eminent as an operator, a student, an inventor, and a writer. He was a man of progressive ideas. He read all the current medical literature, even French and German publications in the original, and he kept thoroughly abreast of the times. When anything new met his approval, he adopted it. He wrote numerous pamphlets and articles for medical periodicals, which secured an extensive circulation and a high authority among the profession. His treatise on Plastics and Orthopoedics has been used as a text-book in Medical Colleges. He visited Europe twice, once as a delegate to the International Medical Congress, London, in 1881, and later, to the Copenhagen Congress in 1884. On these occasions he visited the hospitals in London, Paris and Berlin. During the latter part of the war of the rebellion, for fourteen months, he

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Samuel Powell

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was a brigade surgeon in Graves' brigade, Army of the Potomac. When soldiers of his brigade were captured and sent to Libby prison, he voluntarily gave himself up and went along with them in order that he might attend them. He was a prisoner himself but was accorded special privileges, such as walking about the city with a guard. At the close of the war, he was employed at New York ten months by the Sanitary Commission in writing up the medical history of the war. He was a prominent and valuable member of many societies, among them being the American Medical Association, the International Medical Congress, the American Association of Railroad Surgeons, the American Surgical Association, the Illinois State Medical Society, of which he was once President, the National Public Health Association, the Morgan County Medical Society, of which he was a founder and charter member, the Tri-State Medical Society, and the Club, one of the strongest of Jacksonville's Literary Societies.

He enjoyed the friendship and esteem of many distinguished medical men, among them being Dr. Hamilton, of New York, and Dr. N. S. Davis, of Chicago. He was among the first in the State of Illinois to administer ether.

Dr. Prince was a man of magnificent brain and splendid character. Not in medicine only, but in all knowledge, he was learned and profound. Almost everything that pertained to the welfare of mankind interested him, and his interest was not merely passive and contemplative—it was active and energetic. He was a philanthropist; he gave liberally; he gave his time and skill many times to patients without charge to them. He was one of Jacksonville's most public-spirited citizens. He helped along many public enterprises. The public welfare was his private care, and he promoted it by every means in his power. On all public questions his pen was quick to furnish valuable suggestions in communications to the press, which were remarkable for the thoroughness and impartiality with which the subject had been investigated and considered. He was a clear, cool-headed, far-sighted student and thinker, a man who liked to investigate everything fully and carefully with an eye single to arriving at the truth.

He was a member of the board of education of Jacksonville for many years, and in that capacity rendered the schools of the city invaluable services.

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ALEXANDER T. DARRAH.

Alexander T. Darrah was born in Delaware, Ohio, March 17, 1837. He came with his parents to Pike County, Illinois, in 1838, and resided there until 1865, when he moved to Champaign County. He remained there until 1883, when he transferred his residence to Bloomington. He was of Scotch-Irish extraction. He entered Rush Medical College in Chicago, from which he graduated with high honors January 25, 1865. He has served two terms as President of the Champaign County Medical Society; served as Secretary of the Judicial Council of the Illinois State Medical Society for a number of years. He was first Vice-President and then President of the Illinois State Medical Society during 1882 and 1883. He was a member of the Champaign County Medical Society and the McLean County Medical Society, of the Central Illinois Medical Society, of the American Medical Association, and honorary member of the Southern Illinois Medical Association. While he acquired great distinction for success in his profession, he was more prominent from his connection with the Masonic fraternity. In March, 1863, he was initiated in New Salem Lodge, No. 218, in New Salem, Pike County, Illinois. He received his chapter degrees at Champaign in 1875; his council degrees at Urbana in 1876, and received the orders of knighthood in 1877, also at Urbana. He was a member of Bloomington Lodge, No. 43, and of Bloomington Chapter and DeMolay Commandery. He was commissioned Deputy Grand Lecturer of the Grand Lodge of Masons of Illinois in 1868, and held that position until 1873, when he was appointed a member of the Board of Grand Examiners. He served on this board until elected Junior Grand Warden in 1882. In 1883 he was elected Senior Grand Warden. In 1884 he was made Deputy Grand Master. In 1885 he was elected Grand Master of Masons of Illinois, which position he held for two years. Dr. Darrah was deservedly popular. He had a fine physique, well suited to inspire confidence in all who met him. He died at Bloomington, September 4, 1889.

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Alex. T. Durrant.

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EDWIN ARIUS KILBOURNE, M. D.

Edwin Arius Kilbourne, M. D., Medical Superintendent of the Illinois Northern Hospital for the Insane at Elgin, was born March 12th, 1837, in Chelsea, Orange Co., Vermont. When he was five years old his parents removed with their family to Montpelier, where he obtained his elementary education in the public school and afterward became a student at Washington County Academy. During this period he was under the guidance and supervision of a wise and tender Christian mother, who moulded his inclinations and proclivities, and who inspired him with the principles to which he has adhered unswervingly through a long and diversified experience in the contest with the world. His father's death, when he was seventeen, impressed him with a sense of responsibility to which he had hitherto been a stranger, and the following year he left school to devote his attention to his widowed mother, passing two years at home, actively interested in assisting in the adjustment of matters pertaining to his father's estate. During that time he was called to undergo another experience of peculiarly depressing character, his twin-brother, Edward R., dying of consumption July 9th, 1856. In the spring of 1857 he went to St. Johnsbury, Vermont, to become the assistant to his brother, Dr. Horatio Everett Kilbourne, then engaged in the practice of dentistry, and in the same year he commenced the study of medicine with Selim Newell, M. D., a distinguished surgeon of that place. He remained there until the autumn of 1858.

The questions that agitated the Nation in his later youth and early manhood had been of absorbing interest, and the spirit of the stock from which he sprung had been waxing strong within his breast as momentous events succeeded each other, and when the thunder of the echoing gun from Sumter's historic walls boomed through the mountains of his native State, he recognized and answered to the message it carried to his convictions of patriotism and duty to his country threatened with disruption. He was, at the time, a member of the Bradford Guards, a local organization, which in its perfection of military equipment and drill was the pride of the quiet little Vermont village, and with a single exception, the entire body enlisted in a practical response to the first call of Presi-

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dent Lincoln for troops for three months. The "Guards" of Bradford was the first company to tender its services to the Governor of the State, and was one of the ten similar organizations in complete readiness for active service which composed the First Regiment of Vermont Volunteers. Edwin A. Kilbourne was made Sergeant of his company on its formation, the rank and file of which were native "Green Mountain Boys" of all professions and vocations, and representing the best blood in the State. Col. John W. Phelps, commanding the regiment, formerly Captain of the Fourth U. S. Artillery, was born in Vermont, and was a graduate of West Point, of the class of 1836. The command passed a week in rendezvous at Rutland, Vt., where on May 8th, 1861, it was mustered into the service of the United States, receiving orders from General Scott to report at Fortress Monroe, Old Point Comfort, Va., where it arrived at a somewhat critical period, May 13th, and was a welcome addition to the garrison, the rebel occupation of Norfolk having taken place a few days previously. May 17th, the regiment was quartered in Hygeia Hotel, and ten days later, with forty rounds of ammunition and two days' rations, was transported to Newport News. This movement was described by the New York *Tribune* at the time as "the first permanent occupation of the sacred soil of Virginia," a statement not strictly true, as Arlington Heights had been occupied three days before. June 10th, the regiment participated in the battle of Big Bethel, the first engagement of the war of sufficient magnitude to be dignified with the name of "battle," and being the first experience of Vermont troops under rebel fire. The regiment served nearly a month beyond its term of enlistment (which dated from April 20th), and was mustered out at Brattleboro, Vt., August 16th. Sergeant Kilbourne returned to Bradford, his patriotic ardor nothing cooled by his experiences, and associated with others, he recruited a company and entered the three years' service. On the formation of the company, he was elected First Lieutenant, and a few months later received a commission as Captain. The organization was assigned to the Ninth Regiment of Vermont Volunteer Infantry as Company G, Col. George J. Stannard commanding. Colonel Stannard was afterwards promoted Brigadier-General, and in command of the Second Vermont Brigade, won imperishable honors on the field of Gettysburg. In

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E. T. Kilbourne

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July, 1862, the regiment was sent to the Shenandoah Valley, and through the incompetency of General Miles, commandant of the post, was surrendered with other forces to the enemy at Harper's Ferry, September 15th. After being paroled, the command went to Annapolis, Md., and thence to Camp Douglas, Chicago, where it performed guard duty until the following winter, when it was exchanged and sent to the front, and for the next two years the record of Captain Kilbourne is a part of the history of that gallant Vermont regiment's participation in the bloody and cruel war. He was one of its brave and efficient officers, leading his men to posts of danger, sharing with them the hardships and perils of the camp, the heavy marches, and in the embattled lines. His abilities were recognized and utilized in other directions, and he served as Provost Marshal at various points, and as Judge Advocate in important military courts. Unremitting hardships and exposure to malarial influences finally did their work, and he reluctantly resigned his commission just before the close of the war, returning to Vermont again to take vigorous measures for the restoration of his health.

At no time had he abandonded his purpose to acquire a comprehensive knowledge of medicine, and as soon as he was able, he resumed his study. In the winter of 1864–65 he went to Washing, D. C., and read and attended lectures at Georgetown Medical College, and in the fall of 1866 he matriculated at the University of Michigan at Ann Arbor, where he attended lectures and read medicine and took a special course in Qualitative an Quantitative Chemistry, in which he was graduated in 1867. He went immediately to New York and pursued his further studies in surgery and medicine with Dr. Willard Parker, Professor of Surgery in the College of Physicians and Surgeons of that city, from which school he was graduated in the spring of 1868. He accepted the position of assistant physician in the City Hospital for the Insane on Blackwell's Island, New York, which he held about one year, during which he devoted his time exclusively to the study of nervous diseases. He passed successfully a competitive examination for the position of house surgeon in Brooklyn City Hospital, and at the close of his services there, he was appionted surgeon on one of the sailing vessels of the Black Ball line, thus securing an opportunity to go to Europe. He walked the wards and attended the clinics in Guy's and

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St. Thomas' Hospitals, London, where he remained one summer, going thence to Paris, passing several months in that city in attendance at the Medical School and Hospital Clinique in the "Asylum Saltpetriere."

In the winter following he returned to New York, locating soon after at Aurora, Ill., and engaging in the active practice of his professson. About this time, the first buildings of the Illinois Northern Hospital for the Insane at Elgin were nearing completion, and Dr. Kilbourne was solicited to assume charge, and entered into active connection therewith September 15th, 1871, the date of his appointment, and he has since remained its Superintendent. Under his careful and efficient management it has reached a position second to none in this country among institututions of a similar character. At the date of Dr. Kilbourne's first connection with the administration of its affairs, the hospital consisted of a single wing, with accommodations for 150 patients. At the following session, the State Legislature made liberal appropriations and work was immediately resumed. The edifice was completed in 1874, according to the original design, with accommodations for 500 patients, and the new additions were occupied in the spring of 1875. Dr. Kilbourne died of apoplexy, February, 1890.

Dr. Kilbourne, twin with Edward R., is the son of Dr. Ralph and Sally (Dearborn) Kilbourne. They were the youngest of a family of nine children.

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William Jennings

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WILLIAM FITHIAN, M. D.

ONE OF AMERICA'S OLDEST PHYSICIANS.

William Fithian was born in Cincinnati, Ohio, on the 7th of April, 1799; he died in Danville, on the 5th of April, 1890, thus lacking but two days of 91 years of age. He was the first white child born in the city of Cincinnati. His parents were neither rich nor poor, but well-to-do for that time and in that region. At a very early age the young man, following the fashion of the country, was thrown upon his own resources, and compelled to earn his own living. He became a practical printer, and I remember having heard him tell how he set the type for a whole volume of the Legislative Enactments of the State of Ohio for one year, working until late in the night, by the light of a candle, or tallow dip, in order to accomplish his work within the time specified by his contract; and this instance was typical of his entire life—he was intense in the performance of his labor.

With the money he had earned by setting up the Statutes, he begun the study of medicine with Dr. Carter, a name famous among the ancient practitioners of Ohio, and soon became his preceptor's favorite pupil, and was detailed by the doctor to do much of his riding and work. He was matriculated a physician and surgeon, and given a diploma after three years of study. About the time of his graduation, he was, under an old practice in Ohio, made an Associate Justice, sitting with the County Judge of his county in the hearing of a number of cases. He was exceedingly successful in the opening years of his practice; but in 1826 he determined to seek new scenes of operation, and, with this end in view, came to Illinois, and, after making some explorations, decided to settle in Danville. He returned home, closed out his business, and in 1827, removed to that city, then a village of two or three hundred people, and occupying the site of an ancient Indian settlement. This place was his home until death.

Dr. Fithian was a man of intense purpose and of radical convictions, and he early identified himself with the Whig party. More than any other single man, he turned Vermillion county, his home, from the politics which dominated in all the surrounding counties,

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and made it reliably Whig. Recognizing his leadership and services, his party elected him State Senator for one term, and a Representative in the Legislature twice. In the Legislature he was an important figure. His speeches and debates were important features of the sessions during which he served, and some of them are still preserved, at considerable length, in the proceedings of the respective Houses. But during all these diversions he was still the physician, and while in attendance upon the Legislature, was consulted by, and prescribed for, some of the most prominent people then in public life at the capital of the State; and he formed friendships that were stronger than those produced by political associations alone, and which continued during the lives of his associates. I had almost said during his life, but he outlived them all.

In the formation of the Republican party in this State he figured prominently; was made an elector, in 1856, and took an exceedingly active part in the campaign of 1860, resulting in the election of his friend, Mr. Lincoln. Mr. Lincoln was a friend and adviser for the Doctor, and his representative in much of the little litigation which the doctor ever had. They were intimate acquaintances, and Mr. Lincoln, remembering the worth of his friend, appointed him, during the Civil War, Provost Marshal of the then 7th Congressional District of the State of Illinois, a position which he filled with entire credit, and where all the arts of the politician and all the patriotism of the official were constantly brought into requisition. There was more trouble in the 7th District than in almost any other in the State, and it was allayed by the great personal influence the Doctor exercised among his old friends and patrons.

After the close of the Civil War he resumed the interrupted practice of his profession, and continued it until within two years of his death. The clearness of his mind, and the extent and variety of his medical information, made him medical adviser in a majority of the intricate cases arising in his neighborhood.

During all the years of his life, as I have intimated, the chiefest object of the Doctor's life was the practice of his profession. The writer has often heard him tell of the peculiarities of his practice in the early days. He was obliged to keep from four to six horses, and his rides extended from McLean county, on the west,

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far into the State of Indiana on the east, and from Iroquois county, on the north into Edgar county, on the south. He would ride a long circuit, return to Danville, snatch a few hours' rest, and depart, freshly mounted, upon another ride, and so on until exhausted nature compelled a cessation. He was greatly successful in treating local disorders incident to a new country, and his services were sought by high and low, and all whom he visited became his friends, thus accounting in part for his power in matters social and political. The country being sparsely settled and the inhabitants of limited means, his accommodations upon such rides were of the slenderest; he carried with him his supplies of tea, however, instead of liquor, distilling the tea when opportunity afforded, but chewing its leaves when constrained to do so by lack of proper facilities for the preparation of the drink. Through all his long life he was a man of exceedingly temperate habits in matters of both eating and drinking, and took an earnest part in the early temperance movements in the West.

The Doctor was a man of excellent business qualifications and approved judgment. He invested largely in Government lands at Government prices, and died the owner of thousands of acres of as rich lands as the State of Illinois contains. In his late years there came to him the same longings for green fields and the quiet of the country that happen to most men of intense activities, and his chief delight was in the possession of his broad, fertile acres.

The Doctor, trained in the school of 'business exactitudes, and regarding a contract as a contract, acquired a reputation among the easy-going populace, such as settled our frontiers, for severity in money matters; but those who knew the reserves of his life know that while he maintained his exactitude, he was, unostentatiously, a large subscriber to enterprises of public moment and fair in the dispositions of his private means; not lavish, but generous, and the handsome estate which he left would have been greatly increased, but for the secret benefactions which he did.

He was preceptor to a large number of young men, some of whom, now in middle life, and some who are old, survive as eminent and successful practitioners. It was his fashion to hold informal discussions upon medical matters with young and old physicians, and he left the imprint of his wisdom and judgment upon all with whom he came in contact.

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The Doctor was four times married. Two sons survive him, born from his second wife, and a grandson from the same marriage. His last wife died in February, '87. Her children, by her first marriage, three in number, are still living and are residents of Chicago.

For almost a century this man was an actor in the busy front of our rapid civilization. He participated in all the trials and dangers of a frontier life. Night and day he was a restless rider in the pursuit of his profession. At the call of suffering humanity he traversed pathless forests and unbroken prairies; he swam swollen and turbulent streams; he bore the exposures of life, of summer heat and winter storms, and his adventures, related by him in his old age by his own fire-side, thrilled like the stories of travel in distant lands; and, indeed, the land that he traveled and helped to civilize has become distant and inaccessible save through the medium of history and the simple personal recitals of the very few who still survive to tell the story of the Great West.

During the Black Hawk War he was a soldier; during the Civil War he twice visited the front, looking after his son, who was a Lieutenant in the 37th Illinois Volunteers, and others who were dear to him.

The man matched the times in which he lived, and was a product of them; resolute, simple, severe, and exact. Something of the hardiness of his circumstances gave force to his character; but by the bedside he was low-voiced, tender, precise and faithful. Autocratic as becomes the physician, in whose hands are the issues of of life and death, he was regardful of the feelings of those in whose presence he stood. He was a good man, with defects; a strong man with weaknesses, and he made a large impression on his time and in the country of his choice. Those who watched and waited his passing, long, painful, solitary, will realize as never before how great a boon it is to die, when the springs of life have ceased to sparkle, and shadows cover the whole wide world, and the only Light is from the one open Gate, through which the loved ones have gone on before. He has ushered in thousands, and lightened the pains and softened the departures of three generations of men. He, the old and great physician, bowed before the King of Terrors, to him a Minister of Peace.

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ROBERT W. CROTHERS.

Robert W. Crothers died at Delavan, Illinois, January 10, 1890. Was born April 25, 1833, being the fourth child of Noble and Rachel Crothers, then living at Mount Pleasant, Ohio. In 1837 his parents moved to Illinois and settled in Fulton County. Here Dr. Crothers received his early education in the common schools of the county. He received his primary course in medicine at the St. Louis Medical College, and graduated at the Jefferson Medical College of Philadelphia in the spring of 1855. Dr. Crothers first located in Canton, Fulton County, Illinois, in the summer of 1855, where he followed his profession until the winter of 1856, when he removed to Delavan, Tazewell County, Illinois. Here he opened a drug store and built up a practice which for thirty-six years showed a degree of medical skill, which elevated him, not only in the estimation of those who best knew him, but in his profession. In 1864 he was united in marriage to Miss Minerva Lillibridge, of Detroit, Michigan. His attachments for home and friends were strong and of the happiest nature. Dr. Crothers began life on his own account with small financial means, but possessing a firm will and good judgment, coupled with native intellectual and physical endowments, he made life a success. His wisdom and discrimination, aided by his untiring devotion to business, placed him high in his profession as surgeon and general practitioner. The Doctor was radical in his conclusions, devoted in his attachments, and public spirited as a citizen. He was regulated in all his acts by a firm adherence to principle, and whatever he conceived his duty, he did it fearlessly without regard to the censure or applause of any. As a physician he was kind and attentive, had fine intuitions, and seldom erred in diagnosis. He attached himself strongly to a large circle of friends and patrons, in an intelligent community, and who to-day deeply mourn his loss. Dr. Crothers was a member of the Illinois State Medical Society, the American Medical Association and the International Medical Congress. He greatly enjoyed intercourse with his brothers in the profession, and made it a point to attend their meetings whenever he could do so without neglecting the sick and suffering. He was a great reader and put forth every effort to keep up with the times in his profession, and in his library will be found many valuable works. But the Doctor's life work is completed, and he has gone to reap the reward of a true and noble Christian life, leaving a devoted wife with a large circle of friends and patrons to mourn his loss.

R. W. C.

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JOHN N. NIGLAS, M. D.

Dr. John N. Niglas died in the city of Peoria, on March 3d, 1890. Dr. Niglas was born in the city of Vienna, Austria, in 1819. After graduating from its University, he was admitted to the priesthood in the Roman Catholic Church. He received the degree of doctor of philosophy in the "Josephinum School" of that city. While a priest of the church he was regarded as one of the most eloquent and attractive pulpit orators. On the breaking out of the political agitation in 1848, he sided with the revolutionists, and got into disgrace with his church. Finding his position at home uncomfortable and dangerous, in the summer of 1849 he came to America with the intention of settling in St. Louis. Upon his arrival there he found cholera prevailing, and abandoned the purpose, coming to Peoria that same year. Here he taught the German language, and took orders from the late Bishop Chase in the Episcopal Church. He officiated as a clergyman in that church for a year, in the meantime pursuing the study of Medicine. After graduating from Rush Medical College he commenced the practice of medicine in the city of his adoption. At the breaking out of the Rebellion he entered the army as surgeon of the Sixth Illinois Cavalry, and remained in the service during the war. He served as medical director of a division of the Army of the Tennessee, with headquarters at Memphis. After the close of the war he returned to Peoria and resumed the practice of medicine, in which he continued until within three years before his death, when he was obliged to abandon it on account of impaired health, a sufferer from Rheumatoid Arthritis. Dr. Niglas occupied several public positions in the city of his residence, was a member of the School Board, pension examiner for several years, and in 1870 ran for Congress in the old Fifth Congressional District, but was defeated. He was connected with several Masonic orders, and was a prominent Knights Templar. Dr. Niglas was a man of commanding presence, tall and well proportioned, polished in manners, and of a genial and social disposition. His acquirements, both literary and professional, were of a high order, and in his intercourse with his brother practitioners was honest and honorable.

R. B.

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ROBERT PRATT JENNINGS, M. D.

Robert Pratt Jennings, M. D., was born near Delaware, Ohio, November 9, 1839. He received his literary education in the Ohio Wesleyan University, and commenced the study of medicine in the spring of 1860, and attended his first course of medical lectures the ensuing winter at the Starling Medical College, Columbus, Ohio. At the commencement of the war of the rebellion he responded to the first call for volunteers for three months' service, and enlisted in the Fourth Regiment Ohio Infantry, which was immediately re-organized for the three years' service. The regiment was at once ordered into West Virginia and participated in the military operations there. The severe exposures of camp life induced an attack of rheumatism which caused his discharge from the service January 1, 1862. After his recovery he resumed the study of medicine, attended a second course of lectures, and graduated from the Starling Medical College in the class of 1863. Soon after he again entered the army as assistant surgeon of the Fifty-first Regiment Ohio Volunteer Infantry, in which post he remained until his final discharge, November 2, 1865. Soon after he settled in the practice of medicine at Delavan, Illinois. In March, 1866, he married Miss Florence Viola Hill, who died in November, 1875, leaving to her husband a family of five children. Though for some years his failing health prevented him from taking active part in any public work, his pure life, his unswerving fidelity to the right, his uncomplaining, patient endurance of suffering while faithfully ministering to the afflictions of others, showed in whom he had placed his trust. It was his earnest desire that his life might be spared to see his motherless children reach the years of maturity. With this in view he withdrew from outside social life, and found his greatest enjoyment in his own home, where he faithfully and lovingly performed a father's duties. He died October 5, 1889, of tuberculosis of the throat and lungs.

C. A. J.

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H. W. ALEXANDER, M. D.

Dr. H. W. Alexander died at his home in Joliet, on Monday, 27th May, 1889. He was born in St. Joseph County, Mich., December 1st, 1837. He came to this State in 1852, and lived for some years on a farm near Blue Island. He was educated at Hillsdale College, Mich., and taught school for several years in Cook Co., until the breaking out of the war, when he enlisted in the 88th Illinois Volunteers. He was severely wounded at the battle of Stone River, on December 31st, 1862, and sustained such severe injuries of his back as to lead to the developement of Pott's Disease. This malady steadily progressed through the remaining years of his life, and filled his days with the most intense suffering, till exhausted by the ravages of the disease he yielded his life to the disabling effects of his military service. After being wounded he was appointed Hospital Steward in the regular army, by the Secretary of War, and assigned to duty in the General Hospital at Memphis, Tenn. He continued in the medical department of the army till mustered out in 1865, when he commenced the study of medicine and attended lectures in the Ohio Medical College during the term of 1865–66. Returning to Chicago in 1867, he entered the office of Drs. N. S. Davis and Ralph N. Isham, and graduated from the Chicago Medical College in 1873, having been a close student, and holding the esteem of both preceptor and professor alike. He commenced the practice of medicine in the village of Mokena, and for ten years manfully fought against the steady march of the fearful disease, mid the most intense suffering, till the year 1884, when he moved to Joliet, where he hoped to escape the long, tedious rides over the country roads, and where he could enjoy a larger office practice. He was there long enough to earn the reputation of a careful, conscientious and successful physician, highly esteemed by all classes in the community.

In 1876, he was married to Miss C. Sisson, daughter of the late Gen. Horatio Sisson, of Canandaigua, N. Y.

He was a member of the American Medical Association, and of the Will Co. Medical Society. As a man and as a citizen, he was distinguished for uprightness of deportment, and an unsullied character. As a physician, he was a close observer, and noted for reliability of judgment and carefulness in the administration of medicine. A rare, unselfish and gentle courtesy marked all his dealings with his brethren in the profession.

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GEORGE H. TEBO, M. D.

Dr. George H. Tebo was born at Greensburgh, Ind., July 1st, 1888, and died at Mt. Sterling, Ill., March 11th, 1888, with Pneumonia, sick only five days. His ancestors were of French descent. Dr. Tebo was the third of eleven children, of whom six are now living. At the age of six months his parents moved from Ohio to Brown County, Ill. His boyhood days were spent on a farm near Mt. Sterling. The first school he attended was in a log cabin, with puncheon floor and split-log benches.

He began the study of medicine in 1860 with Dr. J. N. Allen, of Mt Sterling, spending three years under his instruction; he then entered Rush Medical College in the fall of 1864. During the spring of 1864 he spent three months as assistant surgeon in a government hospital at Quincy, Ill., where many wounded and disabled soldiers were sent for treatment.

In the summer of 1864 he began the practice of medicine at Cooperstown, Ill., and remained there until the fall of 1871, when he again attended another course of lectures at Rush Medical College and graduated the spring of 1872. He was a member of the Illinois State Medical Society, also of the Brown County Medical Society.

His time was wholly occupied with the duties of his profession. He was marked for industry, thoroughness and fidelity in his work, and was honored and loved by all the friends and profession who formed his acquaintance. W. W. B.

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A. K. VANHORN.

Dr. A. K. VanHorn died at Yellow Creek, Ill., May 15th, 1889, aged 55 years, 5 months and 8 days.

Dr. VanHorn was born at Athens, O., December 7, 1833, and received his literary education at Willmington College, Pa. In 1857 he came to Illinois and located at Rock City, where he began the study of medicine with Dr. G. V. Ewing in the spring of 1861. He entered upon the active practice of his profession at Baileyville, Ill. He served with honor and distinction as surgeon in the Union Army during the War of the Rebellion, at the close of which he located at Yellow Creek, Ill., where he continued to practice medicine to the time of his death. He was a graduate of Rush Medical College and a member of the Society of Physicians and Surgeons of Stephens County, and although of frail and delicate constitution, and harassed with the arduous duties of the county practitioners, he kept abreast of the times and made many valuable contributions to medical literature.

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Dr. Graham called attention to the resolutions which had been presented following the discussion on the care of the insane. The resolutions were now read and, on motion, adopted, as follows:

WHEREAS, There are, on a moderate computation, not less than two thousand insane persons in the State of Illinois who are inadequately provided for and constantly liable to suffer neglect and abuse in the poor-houses and jails of the different counties, as shown by numerous recent investigations; and

WHEREAS, Such helpless persons, as a matter of common humanity, require kind and intelligent treatment; be it

Resolved, 1st, That the Society should take immediate steps to secure, at the forthcoming session of the Legislature, such legislation as will provide—

1. Accommodations for all who are now in jails and poor-houses as speedily as the resources of the State will admit of.

2. Sufficient separate accommodation for all the insane criminals.

3. Such modification of the jury law of commitment as will prevent unnecessary hardship to the insane and their friends, and obviate the delay in commitment which now occurs and prevents the treatment of cases in the early and curable stage.

Resolved, 2d, That all district and local medical societies in the State, and other interested organizations, be solicited to co-operate with this Society in this work.

Resolved, 3d, That a committee of five be appointed to carry out these objects.

The President appointed as the committee Drs. Ephraim Ingals, Richard J. Dewey, Geo. N. Kreider, J. P. Mathews, Chas. W. Earle.

Dr. Graham then offered the following resolutions in regard to the Columbian Exposition:

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Resolved, That at the World's Columbian Exposition, to be held in Chicago in 1893, there should be such an exhibit as will represent the history, progress and present status of the medical and allied sciences.

Resolved, That this Society hereby requests the American Medical Association, as the largest and most representative organization of medical men in the country, to take the initiative and inaugurate such measures as will secure a creditable medical exhibit.

Resolved, That the President of this Society be instructed to appoint a committee of three to represent the society should there be any call for such representation during the year.

Adopted.

The Secretary read a communication from the Missouri State Medical Society asking that the delegates from this Society to the American Medical Association use their influence to have the next meeting of the Association held in Omaha.

On motion of Dr. Mathews, the Secretary was empowered to issue certificates to any members desiring to attend the American Medical Association, the British Medical Association, or the International Medical Congress.

On motion of Dr. Earle, Dr. J. B. Greene, of the Indiana State Medical Society, was made a member by invitation.

Dr. W. O. Ensign offered the following resolutions:

Resolved, That as members of the Illinois State Medical Society, assembled in annual meeting in the city of Chicago, May 6th, 7th and 8th, 1890, who have been most royally entertained by our medical brethren, we desire to express to the daily press, to the various railroads centering in Chicago, to the Committee of Arrangements and its chairman, Dr. Charles W. Earle, to Dr. Charles T. Parkes, to the Faculty of Chicago Post-Graduate Medical School, and to the other members of the medical profession of this city our high

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appreciation of the extended and elaborate provisions made for the enjoyment and gratification of the visiting members in attendance upon the various sessions of this meeting.

Resolved, That in returning to our homes we will carry with us most happy recollections of the kind and fraternal greetings received at the hands of the medical profession of Chicago, which we will long cherish in memory of the most pleasant and profitable occasion of our Society's meeting in its Fortieth Annual Convention.

The resolutions were adopted.

The President, Dr. John Wright, now arose and addressed the Society, saying:

This finishes the programme for to-day and ends the session of the Illinois State Medical Society for the year. Before leaving the chair I wish to thank the officers and members of the Society for the courtesy that has been shown me during the time I have occupied it; and especially do I wish to thank the Committee of Arrangements for the many favors shown me by the members of that committee. My inability to speak so as to be heard has been unpleasant to you, I have no doubt. I know it has to me, but I could not help it. I have been sick all the time I have been here, and this explanation is made for the benefit of those who are not aware of the disadvantages that I have been laboring under, and that they may be able to see that it is a misfortune and not a fault of mine.

I now appoint Drs. W. O. Ensign and Warrington Earle a committee to conduct my successor, the President elect, Dr. J. P. Mathews, to the chair.

Dr. Mathews, in taking the chair, said:

Ladies and Gentlemen: To be elected President of the Illinois State Medical Society is a distinguished honor that no member has a right to decline, and no member can have other than a just pride in its attainment. However diffident

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I may feel as to competency to properly fill the office, as I certainly do, I accept it with a determination to do the best I can for your interests as members of this great organization of the State of Illinois. I most sincerely thank you for your confidence in electing me.

On motion, the Society adjourned to meet in Springfield the third Tuesday of May, 1891.

D. W. GRAHAM,
Permanent Secretary.

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ANNUAL ADDRESS OF THE PRESIDENT.

JOHN WRIGHT, M. D., CLINTON.

THE MISSION OF THE MEDICAL PROFESSION; ITS DUTIES, AND THE MISTAKES OF SOME OF ITS MEMBERS.

Ladies and Gentlemen of the Illinois State Medical Society:—One year ago you elected me President of this Society, a position of honor, one of the highest honors the Illinois State Medical Society can confer upon one of its members.

I was not present when the Society adjourned at its last meeting, therefore I had no opportunity of expressing to you my feelings of gratitude for that honor. But I now ask you to accept my thanks for the honor conferred, and without further remarks I will enter upon the discharge of the duties of the hour.

As I look over this assembly, I see before me many familiar faces, some of whom I have been accustomed to see at these annual gatherings for more than a quarter of a century. I also see before me some vacant chairs, made vacant by death since our last meeting. We will miss those men that occupied those chairs, for they were always at the front, full of knowledge and ready to impart it.

I also see before me men who have stood where I stand to-day, some of whom are older and much more experienced than myself and have been honored, not only in the State

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Medical Society and the American Medical Association, but also in the International Medical Congress, which impresses me with the fact that I am addressing an intelligent and educated audience, men and women of culture, experience and acknowledged ability, and which forces me to admit that I feel unable to fully and satisfactorily discharge the duties of this important trust. But I am encouraged by the words of a most worthy writer, who once said, in speaking of the medical profession, "eloquence gives spirit to the pulpit, gives spirit to the bar, but the genius of medicine sits pensive and alone, her finger on her lip, as if admonishing her votaries by the example of silence to bury deep within the recesses of their bosoms the disclosures of the sick." Ours is a quiet profession. The prudent physician is the keeper of his own counsel, thinking much and speaking little.

The healing art is old as time, and if we were to look back over its history we would have to go back to the origin of man, for its history is the history of man. And the medical profession, as an organization, is also of ancient origin, and its history is the history of civilization and it is intimately connected with the history of all that is great and good.

All nations in all times have had faith in medicine and have used means for the relief of human suffering and the cure of disease. And this faith in medicine is not entirely due to civilization or education, but it appears to be instinctive in the human family, and is as indelibly fixed in the minds of the uncivilized as is their belief in a Supreme Ruler, which is evidence, to my mind, that the work of the medical profession is truly a noble work. The Bible, as well as profane history, teaches us that physicians have been recognized in all ages. In fact, the history of nations, their civilization and their progress in knowledge, education, morality and religion, is so intimately connected with the history of medicine and the medical profession, that the history of one of these would not be complete without the history of all of them.

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No great reformations or revolutions have ever taken place without being in some way connected with, or dependent upon, the aid of the medical profession. And in the discharge of its duties, it has never faltered, no difference how great the danger or how laborious the task. This is true of the medical profession of our own nation. When our flag was trailed in the dust by traitors' hands and the nation's life endangered by war and its desolating influences, the medical profession responded to the call for help and our surgeons went to the front and discharged their duties in a manner that was second to none in the army. They ministered alike to friend and foe, in the camp or on the march, and on the battle-field, sharing the toils, the privations and the dangers of each, but never forgetting in their zeal that the mission of the medical profession is to save life and not to destroy it, not even of an enemy, if wounded or helpless on the battle-field.

There were nearly 400 army surgeons killed or died of wounds and disease during the late rebellion in the Union army alone, and probably there were as many more in the Southern army, which shows the loss to have been very heavy, when we consider the number that were in the service. And it is not only in times of war that medical men are exposed to dangers or have shown the noble character of their mission, but it can be and has been seen during the prevalence of epidemic, contagious and infectious diseases, such as cholera, yellow-fever, small-pox and diphtheria, and other diseases of a like dangerous character. The rapid advances that are being made at this time in every department of the healing art, demands that every member of the profession shall be a student of medicine, and not only a student during college days, but a student as long as he or she continues to practice medicine. There is no other way of keeping up with the times. The practice of medicine of to-day is not what it was even twenty or thirty years ago, and the prospects for

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future discoveries and advances are still bright, and we who expect to keep up with the times in the future, must read; we must work and be students.

In the language of Oliver Wendell Holmes, "before us lies a great task, great in its purpose and noble in its ends. It ranks second to but one—that which ministers to the glory of our Maker."

If this is the mission and the work of the medical profession, we, as members of that profession, should see to it as individuals, that we do nothing that will lower the dignity and honor of our profession. We should work in harmony and work as friends for its success.

And to bring that general good feeling so much needed and I believe desired, I know of nothing that will accomplish as much and stimulate men to work with energy as the organization of county or local medical societies.

The necessity for organization is seen and acknowledged by all professions and occupations. Even the farmers, who have heretofore quietly and patiently submitted to all kinds of oppression by trusts and monopolies, now see the necessity of organization for the purpose of consultation and concert of action. And so it is with the medical profession; here we can meet on an equality, forgetting, at least for a day, the disappointments and perplexities of practice, and reconcile our differences, if any exist, and get acquainted one with another. And as these things are accomplished, those feelings of envy and jealousy that so often exist between physicians in the country and small towns, will disappear and harmony and good feeling will take their place. Every county in the State can, and should have, a local or county medical society, and every member of the profession in that county should become a member of the local society. I, of course, have reference only to members of the medical profession, such as recognize the code of ethics as the rule of action. I have no reference to uniting with homœopaths or

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eclectics, in medical societies or in consultations. Such a union would be destructive to harmony, and should be discouraged by every right-minded member of the profession. The county societies will not weaken the district societies, as some have supposed, but will add to their strength, influence and usefulness, by better preparing their members for work. And it appears to me that we will have to look to the organization of county medical societies if we expect to materially and permanently increase the numerical strength of the State Society. No difference what changes may be made in the constitution of the Society, I think the rule will still hold good, that we should, in every way that we can, encourage the organization of county medical societies. There is just as good material in the country districts to make leaders in the medical profession as there is in Chicago or New York City. J. Marion Sims and Nathan Bozeman both commenced practice in Montgomery, Alabama; Washington Atlee, in Mount Joy, Ohio; Alexander Dunlap, in Greenfield, Ohio, and Samuel G. Armor, in Rockford, Ill. These names are familiar to you all, and each of these men commenced to practice, comparatively speaking, in a small town. And we all know that many of our brightest students come from the country districts, and what they need is the organization of county or local medical societies in order for them to show their ability. Some of the leading men in the profession in Chicago have come up from the country, and the same is true of other cities. And the same may be done by others if they will make the same effort. If physicians will carefully read the proceedings of the medical societies of Chicago and other large cities, they can not help but see the great advantages there are in well organized medical societies. If the physicians of Chicago are better informed than the physicians of the country, it is because they are better organized, have worked harder, have been better students and have learned their lesson better. In fact, that is what mainly constitutes

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the difference between a leader in the profession and an old fogy. One is a student and the other is not.

I am willing to admit that physicians in small towns labor under some disadvantages; the practice is scattered over more territory, requiring more time to do the same amount of work. And besides this there are other disadvantages; they do not have access to hospitals or the privilege of making dissections or attending lectures, as physicians do in large cities; but as a rule, it is not because of these disadvantages that physicians in the country districts and small towns get behind the city doctors, but it is because they get careless and indifferent, stop reading, and become satisfied with a kind of routine practice and put in most of their time in the stores, on the street corners, or in the billiard hall and other places of ill-repute and thus idle away their time, and before they are aware of it they are old fogies.

There are other places where medical men sometimes spend their time that are objectionable, and always lead to habits that are ruinous. I have reference to the drinking saloon and the habit of using intoxicating liquors as a beverage. I am sorry to have to admit that I have seen medical men intoxicated. I have seen them enter the saloon, a place where no medical man should ever be seen. A physician should at all times have a clear head and a steady hand, which no one can have that is in the habit of using intoxicating liquor. No physician is a safe man to practice medicine that is in the habit of getting drunk, and no patient is safe in the hands of a drunken doctor. And in my opinion, no man or woman should be permitted to practice, hold an office, by election or appointment, that is known to be a drunkard. The State Board of Health should revoke the certificate of every member of the profession that drinks alcoholic liquors as a beverage. There should be no excuse for an occasional drunken spree by a doctor. He should not drink at all. And every

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medical college in the land should see to it, that no drunkard received a diploma.

They tell us that drunkenness, or the craving for alcohol after the habit is formed, is not disease. They also tell us that about eighty per cent. of the drunkards never fully reform and that a certain percentage of the number become so degraded and so much like brutes that they should not be permitted to run at large, and should be furnished a home by the State. Is there no way of stopping a business that makes brutes of men and kills men, women and children? Why not blot out the traffic in alcoholic liquors as a beverage entirely? Close the saloons by law, and put every man behind the bars that dares to sell whiskey in violation of law. What we need is to have the business of making drunkards stopped, and then we will have no need of homes for drunkards. I would say place the drunkard-maker in a home, and let that home be a states prison for life, if he will not quit his business, and thus protect the weak men and women that have not got the will-power to protect themselves. The alcoholic liquor business is to-day, by its influence in corrupting our rulers, judges, the press, law-makers and politicians, threatening the life of our nation. And the use of alcoholic liquors as a beverage is making, all over our country and the civilized world, widows, orphans, paupers, beggars, criminals, liars and thieves and is filling our penitentiaries with drunkards or drunkards' children, and our cemeteries with drunkards' graves, at the rate of nearly one hundred thousand every year.

The mission of the medical profession is to save life and not to destroy it, and I think it is time we were taking our position in opposition to the use of alcoholic liquors as a beverage and the traffic as a business and proclaim to the world that we are in favor of our God, our homes and our country, and opposed to the legalized wholesale killing business.

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If the use of alcoholic liquors as a beverage bring about these results and there is no other way of preventing their use, then I am, as an individual, in favor of prohibiting by law forever, the manufacture, importation and sale of all alcoholic liquors as a beverage.

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REPORT OF THE COMMITTEE ON PRACTICE OF MEDICINE.

*J. M. G. Carter, M. D., Sc. D., Ph. D., Chairman, Waukegan.

The Cause and Treatment of Pneumonia.

Pneumonia is one of the diseases best known to the medical profession. That a disease is well-known and easily diagnosed does not necessarily imply that it is thoroughly understood. When a disease is said to be thoroughly understood, it is meant that its aetiology, its processes or pathological modifications, its sequels and treatments are known, and accepted as settled by the profession. Formerly pneumonia of the idiopathic variety was supposed to be due to some atmospheric influence, which, by checking the peripheral circulation, turned the blood current with greater force to the central organs or lungs, the result of which was congestion and inflammation. The pathological process is still considered to be about the same, but the question of aetiology has given rise to some discussion, and in many minds, to doubt.

The germ theory of disease, which is accepted as a fact in regard to many diseases, has been advanced to explain the origin of pneumonia.

Since the discovery of the peculiar form of bacteria in the

*Fellow of the American Academy of Medicine, Member of the American Medical Association, etc., etc.

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lungs of persons dead from pneumonia, a discovery made by Friedländer and Frobenius, much thought has been given to this phase of bacteriology. Six different varieties of bacteria have been mentioned by Bremmer[1] as causing this disease, and others have been mentioned by later writers.

The diplococcus of Fränkel[2] has lately been shown to be present in most cases of pneumonia, especially croupus pneumonia. Wolff[3] found it in ninety-four per cent. of the cases examined by him, there being but a single negative result in seventy successive cases. Baumgartner[5] thinks it is safe to assume a single, sole cause of pneumonia. In Wolff's cases verification was established by cultures in more than half the cases.

The first investigations were made after death, but later authors have examined sputa and exudations from the lungs of patients. Monti[4] examined the exuded fluid in twenty cases with but one negative result. Sometimes the Frankel diplococcus was found in company with other bacteria. In these cases of Monti, Friedländer's micrococcus was not seen. Inoculation of fifty-nine rabbits, while universally successful, produced typical pneumonia only when the sputum was introduced into the trachea. Inoculation under the skin produces septicæmia; into the pleura, pleurisy; into the pericardium, pericarditis. Inoculation of the dura mater of a dog produced meningitis and lobar pneumonia. Fränkel[5], Foa, Whittaker and others have shown that the cause of pneumonia is not confined to the lungs, but invades other organs and tissues. Weichselbaum[6], Netter, Mircoli and others have found the diplococcus of pneumonia in the ventricles of the brain, connective tissue of the mediastinum, the jugulum, about the clavicle, behind the æsophagus, in cavities about the nose, in the drum cavity and labyrinth of the ear. It has been cultivated from the serum of the pericardium before there were any visible signs of inflammation. It has been found, likewise, in inflammation of the cord.

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Emmerich[1] found great numbers of bacteria of the varieties herein referred to, under the floor of a hospital ward where many cases of pneumonia had been treated.

Writing in regard to pneumonia proper, Weichselbaum sums up his conclusions as follows:

1. The bacteria found in different forms of pulmonary inflammation are regarded as the cause of them. This conclusion is completely justified on the following ground: Definite, well characterized species of bacteria not only occur constantly in acute pulmonary inflammations, but can be demonstrated in greatest abundance and activity in the earlier stages of inflammations. They have been isolated, cultivated, and, when introduced into certain animals, have produced processes which, taking them *in toto*, correspond to inflammation of the lung in man.

2. The pulmonic virus is no unity, inasmuch as acute pulmonary inflammation, even croupus pneumonia proper, can be produced by different kinds of bacteria. In this the pneumonias recall acute inflammation of the connective tissue, in which, also, several species of organisms occur.

3. The separation of pneumonias into lobular and lobar, croupus and non-croupus, has an anatomical but no etiological significance. Moreover, the so-called secondary pneumonias, etiologically considered, are not secondary.

4. The diplococcus pneumoniæ is to be regarded as a most frequent exciter of inflammation of the lungs. Friedländer's bacillus organism but rarely causes croupus pneumonia. Catching cold has only a possible predisposing effect.

This summary is, perhaps, a clear representation of the opinion held by the majority, at least, of bacteriologists, at the present time. The opinions of general practitioners are universally more conservative than those of specialists, and many able physicians still hesitate to accept unchallenged the theories and radical views of some bacteriologists.

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It is well known that there is much study devoted to this subject at the present time, and many investigations have been made during the past year, but nothing that can be added, perhaps, to the stock of knowledge or opinion detailed above.

Dr. F. S. Billings, of Chicago, informs me that nothing new has been discovered; and as his personal views correspond with those of many other bacteriologists and the majority of the medical profession, I will quote his own words: "Personally, I do not think either the Weichselbaum, Fränkel or Friedländer organism has any specific relation to pneumonia in man." He gives as a reason or basis for this opinion, "that they are present in the mouths of healthy individuals and do not cause pneumonia, and have also been found attached to the bronchial mucosa of persons killed by accident or dying with intact lungs," but he further states that, "when active and prolonged congestion with serous bronchial effusion is present, then they may cause pneumonia."

When an epidemic occurs of a disease caused by bacteria, it is said that the air is filled with them. Prof. Nussbaum[7] has stated that during an epidemic of cholera the air is filled with the cholera bacilli, and yet only one per cent. of the population are affected by the disease. Hence, ninety-nine people in every hundred, though eating, drinking, and breathing cholera bacilli, escape the disease. Such may well be believed to be the case with the bacillus of pneumonia, though it must be less powerful in its activities than that of cholera. It is well known that pneumonia is more prevalent in some seasons than others, and that it occurs most frequently under certain atmospheric conditions. Perhaps most cases occur during the winter and spring months[8]. The humidity of the atmosphere and the presence of ozone, also seem to exert a causative influence. On the 12th of October, 1889, at Waukegan, Ill., the wind was in the southwest; it suddenly changed to the northeast, the temperature fell from 70°

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to 50°; the ozone in the atmosphere was increased. Several cases of catarrhal pneumonia occurred, the apparent cause being the change in the condition of the atmosphere. I noticed, however, that during the same period many cases of pneumonia were reported as occuring in other localities. The 15th of February, 1890, the wind was in the southwest, the temperature rose from 30° to 65°, ozone not marked, atmosphere humid. Several cases of pneumonia. April 1st to 5th wind mostly east and southwest, rainy, warmer, temperature 40° to 65°. New cases of pneumonia. Such observations are likely to make one believe that atmospheric changes are causative of the disease. Jaccoud[9], while not denying th e etiological influence of bacteria, holds that exposure to c old is also causative, and perhaps generally the exciting cause.

Dr. Baker[10] demonstrated before the Brooklyn Pathological Society that the curve representative of sickness from pneumonia pretty regularly followed the curve of temperature. His studies extended over many years and included nearly fifty thousand cases of pneumonia. He showed, in all his references, "that the sickness curve follows the temperature curve, not only in pneumonia, but also in bronchitis. If pneumonia were due to bacteriological influence, this cause must certainly be influenced by the weather, more than that bronchitis would probably be caused by the same germ."

Sevestre[11] considers that certain cases of endemic and epidemic broncho-pneumonia in childhood during the summer months, are due to dietary indiscretion, the inflammation extending to the lungs from the intestines through the lymph channel.

Tomasi[12], Golgi and others believe pneumonia to be caused sometimes by malarial poison, and this view corresponds with that of physicians in the southern part of Illinois and other malarial districts in the United States, where this form of disease is called "winter fever."

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Dr. Mosny[11] reported to the Academy of Medicine, of Paris, a case of broncho-pneumonia in a woman who had been nursing a case of erysipelas. The patient died, and the examination of the exudation from the lungs revealed the fact that the pneumococcus was not present, but that the streptococcus erysipelatis was, showing, at least, that the disease was not caused by the bacillus of pneumonia.

At present it must be admitted that the cause of pneumonia is not fully settled by the profession; but the majority of physicians, probably, are not willing to subscribe to the bacillus theory. It has not been proved that the bacillus is not a concomitant rather than a cause of the disease. Still further investigation must make the final decision, and most likely we shall not wait long until the decision is made.

It has been hoped that the germ theory of disease might lead to specific medication. It may justly be anticipated, if this theory is true, that absolute cure of many diseases may be promised as soon as germicides are discovered which will kill the germs without injuring the patient. Is this possible? At present, we do not know. So far, at least, as pneumonia is concerned, the knowledge or lack of knowledge of the presence of the pneumococcus is of no avail in the treatment of the disease.

In the present state of our knowledge, the following indications for the treatment are clear: 1. To equalize the circulation and diminish the determination of blood to the lungs. 2. To reduce the temperature of the body. 3. To sustain the patient's strength. 4. To assist the mucous membranes and organs of secretion and excretion in the performance of their functions. 5. To allay pain.

The first two of these indications are met by the same general treatment. The chief object is to control the high heat, and this is largely accomplished by reducing the blood pressure and allaying the excitability of an overworked heart. I use aconite, gelsenium or digitalis according to

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the grade of the fever, the condition of the lungs, the heart and the stomach. In high fever, with bounding, strong pulse, I use aconite and add gelsenium if there is irritable stomach, with or without headache. Petresco[9] says digitalis may check pneumonia at the outset. It is of value in asthenic cases and where the heart is weak. Convalaria is sometimes advantageously substituted where digitalis is not well borne.

I have not been favorably impressed with antipyrin nor with antifebrin, and of late have not given them. Dr. Humphreys[13] remarks that antipyrin should not be given in catarrhal pneumonia generally, and not in lobar pneumonia when there is oedema of the lungs.

Quinine is usually serviceable, and, in malarial cases, essential, not only to reduce temperature, but also as a germicide and antiperodic. But in some cases it affects the stomach and nervous system badly. Dr. Jacobi[10] considers that quinine lessens pulmonary congestion and strengthens the heart's action. Alcohol, brandy or whisky in large doses will help control temperature and equalize the circulation. It has seemed to me that the alcohol secures this result by its action on the vaso-motor nervous system. I have also seen most beneficial results from early blistering with cantharides. It not only alleviates pain, but asssists in controlling the congestion.

Liebermeister[14] advises blood-letting when there is œdema of the lung; but I believe this may be avoided by blistering and the use of digitalis. He is also much in favor of the cold bath, preferably in the evening. There is no doubt that a wise use of the bath, tepid or cold, as circumstances may require, will assist in reducing temperature and has a restorative, rather than a debilitating effect.

In many asthenic cases tartar emetic seems to be of special value. Bruckner[14] has reported over seventy cases treated

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with this drug in which the success was so marked as to make him enthusiastically in favor of the remedy.

The ice bags to head and affected portion of lung, as recommended by Angel Morrey[5], may be used with success and often give great comfort to the patient; but, like the baths, they must be attended to systematically. Morrey says the ice bag acts as a tonic to the heart, the nervous system, the muscular system and the respiratory centers. It thus aids in the third indication, maintaining the patient's strength. It soothes the motor and sensory systems, and in this way produces sleep.

For the difficult breathing likely to occur on the fifth day, with the small and rapid pulse, perhaps nothing is better than camphor, benzoic acid, valerian and such stimulants. Alcohol in large doses is likewise beneficial. The inhalation of carbonic acid gas in broncho-pneumonia, as recommended by Dr. Lamallerée[15], I have not used. The third indication—the maintenance of the patient's strength—is accomplished chiefly by nourishment. With Fräntzel[16], I recomend absolute rest in bed, and liquid nourishment. The patient should be well fed from the beginning. For thirst, lemonade, mineral and vegetable acids are refrigerant, and assist the digestive process. I use aromatic sulphuric acid generally, believing it to have a salutary influence upon the stomach, liver and pancreas, aiding in the digestion and assimilation of food.

The secretory functions should be carefully observed, and aid should be given to the mucous membrane of the lungs, to the liver, kidneys, pancreas and alimentary canal. Ipecac is an invaluable remedy as a stimulant to the mucous membranes and to the liver. Aromatic sulphuric acid is a stimulant to the pancreas and is of especial value in cases with typhoid symptoms. Digitalis and nitrate of potash are excellent renal stimulants. Mercury in some form in small doses, as a stimulant to the liver and intestinal canal, is very

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useful. I prefer the mercury and calk mixture given for a few days, and then follow that with muriate of ammonia.

Pain must be controlled, and nothing can take the place of opium. I am in the habit, in uncomplicated cases, of giving the following prescription: R. Quiniae sulphatis, ʒss; Pulvis Doveri, gr. xl; Hydrag. c. Cretae, gr xx; M. et. div in Cap. No. 10.

The dose is for an adult and is varied to suit the patient, and his diseased condition, at intervals of four hours. This prescription assists in controlling the congestion, acts as a heart tonic, aids the patient in expectoration, assists the liver and intestinal canal in the performance of their functions, alleviates pain, and, if the Dover's powder is made with the nitrates instead of the sulphate of potash, stimulates the kidneys.

ADDENDUM.

It is to be regretted that there is not a well-appointed laboratory for microscopical and physiological research in Chicago. Two or three institutions do some elementary work, and a few gentlemen are making some private investigations, but nothing is done that compares well with Old World researches. I am informed by Dr. W. T. Belfield that some Eastern institutions, like Johns Hopkins University, are far ahead of us. Why should this be so? If one institution or society cannot control sufficient means to establish a laboratory that would be an honor to this great city—Chicago—there ought to be an *united* effort, and that at once. The subject of bacteriology ought to receive such attention in this country that we should not need to depend upon Europe for our knowledge. Before the beginning of the Columbian Fair, it is hoped that Chicago may be the seat of such a well-equipped laboratory for medical, physiological, microscopical and scientific investigation that our European brothers will realize that we are making rapid strides toward the front.

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Then we may look for help to decide this vexed question of bacteriology, and the bacillus theory.

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EVOLUTION IN ITS RELATION TO THE INFECTIOUS DISEASES WITH ESPECIAL REFERENCE TO THE LOCAL VENEREAL AFFECTIONS.

By G. Frank Lydston, M. D., Chicago.

Much of medical progress for several decades past has consisted in the isolation and differentiation of contagious diseases and their classification as specific entities. Very little attention has been paid to the possible transmutation of various forms of infectious diseases or to their co-relation. The natural result of our enthusiastic endeavors to detect a specific germ—or whatever the *materies morbi* may be—of each disease, has been a departure from all theoretical reasoning or experimental research tending to prove the unity of origin of diseases, which are apparently clinically separate and distinct entities.

Dr. G. De Gorrequer Griffith, of London, England, published several years ago in the *Midland Medical Miscellany*, a theory of the unity of poison, which implied that certain contagious diseases were identical in origin, and that their poisons could be developed through certain changes of a chemical character occurring in organic matter. Thus he recognizes two forms of scarlatina: 1. That contracted from a scarlatina patient, or through the medium of something that has been in contact or in communication with him. This the author termed "orthodox scarlatina." 2.

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That which has generated *de novo* from blood poison, such as occurs in puerperal patients and in surgical cases (the "surgical scarlatina" of Sir James Paget.), and in surgical cases from deleterious matters absorbed or otherwise passed into the blood, and thence into the tissues of the body; or from noxious drains and sewers, or the indigestion of pernicious articles of drink or food, such as tainted water, milk, cream, decomposing animal or vegetable substance. To this form Dr. Griffith gives the name "toxaemic," to distinguish it as regards origin from the "orthodox." By *unity* is meant not that the poison is always the same, but that the one *origo mali*, whatever it may be, will originate several so-called different affections. Dr. Griffith cites many cases which apparently bear out his theory. Thus he relates one case in which apparent scarlatina occurred from eating tomatoes. Another case of apparent scarlatina arose from the ingestion of too high game. He quotes other cases of simulative scarlatina resulting from puerperal septicaemia.

The possible relation of ptomaines and leucomaines to the morbid phenomena developed from these various causes was not dwelt upon by Dr. Griffith. Dr. Griffith's theory implies that through the medium of varying circumstances of light, heat, deprivation of oxygen, and a stagnant condition of their environment, putrescible organic materials may give rise to the development of a number of poisons, which, although similar in origin, produce varying effects upon the human economy.

The possibility of the spontaneous origin of specific disease has ever been a source of controversy, but that such an origin is demonstrable, will, I think, be evident to anyone who carefully studies some of the more recent epidemics. The last epidemic of typhus fever in New York is an excellent example, and the preponderance of evidence would seem to show that the epidemic of cholera which recently occurred in Europe was due to local causes and consequent

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spontaneous development of the disease. It is only by a recognition of the origin of diseases of a specific type *de novo* that modern sanitation can accomplish its object.

A very interesting case was reported several years ago in the *New York Medical Record*, by Dr. L. J. W. Lee, which appeared to be strong evidence in favor of the theory of unity of origin of infectious diseases. In this instance, among ten cases of disease in one house, variola, varicella, measles, typhoid and remittent fever were said to be represented.

As might be imagined, the theory of unity of poison is not very easy to support by actual demonstration. For example, it would be difficult to prove in any given instance that the emanations from the sewer did not contain germs derived directly from cases of specific disease.

The vital fault in Dr. Griffith's theory of the unity of poison is, it seems to me, its strictly chemical basis. Nowhere does he allude to the condition of environment I have mentioned as possible factors in the evolution and differentiation of living germs. With the proviso that instead of the development of chemical poisons *per se*, there occurs under varying circumstances of environment the development of varying types of germs possessed of varying degrees of virulency, I am ready to accept the theory of unity of poison in some infectious diseases as a fact. I do not believe that varying circumstances of heat, moisture, filth and deprivation of air and sunlight will determine the development of a widely varying number of chemical poisons, excepting such development occur through the medium of bacterial organisms. As every progressive physician is well aware, it has not yet been established that it is the germ, rather than the chemical product of the germ that produces disease.

That the noxious vapors and gases of the sewer are capable of producing a variety of diseases, is well known, but it is quite generally accepted that such sewer emanations

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contain the distinctive germs of these different affections. There would seem to be, however, many peculiar cases which are hardly explicable upon the ground of a specific germ infection, and it is just here that an acceptance of Dr. Griffith's views is almost unavoidable—at least in so far as the doctrine of the interdependence of some of the various poisons of disease and their unity of origin in certain instances is concerned. I believe, however, that the transformation of the original poison into a number of poisons which affect the human system by the production of various so-called specific disorders must occur through the gradual process of evolution and not by a sudden metamorphosis.

If the evolutionary theory be correct as applied to organisms of a higher order of development, and if, moreover, we accept the germ theory of the origin of disease, great progress cannot occur in medicine until we study the relation of the development of infectious diseases to evolutionary laws. It may be accepted that disease being incident to the life of every animal, just as we study the evolution of the animal, so should we study the evolution of its diseases. Trite though the proposition may be, every phase of animal development and progression is subject to adverse elements of various kinds. Thus each animal is relentlessly pursued by foes of a higher or lower order of evolutionary development. Man, with his superior power, born of knowledge, has been able to contend successfully with all of those elements which are inimical to his welfare, with the exception of those apparently insignificant little organisms—the germs of disease. As man himself has become differentiated through varying circumstances of environment, so have his foes become differentiated, hence he has become more susceptible to the inroads of certain forms of disease germs, but less susceptible to others. Certain varieties of germs have become extinct, while new forms have been developed; others have become so modified as to bear almost no resemblance to the parent stock.

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By pursuing this line of study, we may eventually find that many diseases which are now apparently quite dissimilar, have become so by differentiation of the germs on which they depend, and may discover the circumstances which have brought about such differentiation. There are numerous striking examples that apparently bear out the evolutionary theory of the origin of infectious diseases.

We will take as our point of departure diseases of a known or alleged specific nature, and see if we cannot find elements in two forms of the same disease which are very dissimilar. In small-pox we note several degrees of severity from a varioloid, in which there perhaps exists but a single pustule, to the variola hemorrhagica, or maligna, which is so fatal to life. The resemblance between these two extremes is very slight, yet they are the same disease. Or, to go still farther, note the difference between small-pox and vacinnia. Not much resemblance between the two, yet the poison of the latter is a derivative of the former, and by its action the human system is rendered insusceptible to the attacks of its more vigorous and noxious ancestor.

In scarlatina we have all grades of severity, from the walking form, in which one would hardly know that the child is ailing, to the scarlatina anginosa and maligna in which the life of the little victim is so rapidly destroyed. A singular fact is that in the severe forms of scarlet fever, the angina assumes characteristics so severe, and of so peculiar an appearance, that the doctor is compelled to say, "This child also has diphtheria." Is it credible that the system of the child could be a field for strife between two infectious constitutional diseases of so pronounced a type? I think not, but I am convinced that these cases are an illustration of the manner in which certain diseases, supposed to be separate and distinct, are co-related; and, furthermore, of the possibility of their development *de novo*.

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Typhoid fever has numerous degrees of severity, the extremes of which are strikingly dissimilar, although the *materies morbi* is invariably the same. The same is true of typhus. It would seem, moreover, that typhoid and typhus fevers may develop *de novo* under favorable circumstances of environment.

Malarial fevers vary in severity, from a slight ague shake, followed by a fever, to the pernicious type which speedily destroys life. Clinically, malarial and typhoid fevers are frequently confused.

Septic infection in surgical diseases may result in any one of several degrees of severity of blood poisoning, from the slight febrile disturbance, which was formally termed "traumatic fever," to the overpowering and speedily fatal septaemia, which is so nearly identical with snake-bite in its effect upon the blood. Interposed between the two we have acute and chronic pyaemia. These phases of disease differ widely, yet they are one and the same, and due to the same cause.

Erysipelas is a disease which may vary in type from the slight form of inflammation, which is hardly more than an erythema, to such a severe form as that which sometimes affects the scrotum, and not only causes sloughing, but often a fatal result. Can we detect the slightest resemblance between the two? I think not, yet they are the same disease. Inoculate your finger with blood drawn from a patient with erysipelas of the face, and you may escape erysipelas entirely; if you do not, it is apt to occur in a mild form. If, on the other hand, you inoculate yourself with the secretions from a sloughing scrotum, and you do not die of septaemia, the least you can expect is phlegmonous erysipelas of a severe and dangerous type.

I would also call attention to the vast differences which exist between the different forms of puerperal disease; thus, we meet with cases of peritonitis, cellulitis, phlebitis, and

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acute fatal septaemia, all due to the varying conditions and effects of the same *materies morbi*.

Further illustrations are, perhaps, unnecessary, but I must not omit the most important analogy of all, viz: Diphtheria. Recent chemical observations have shown us that the diphtheritic virus, germ, influence, or whatever you may choose to term it, is capable of producing many different phases of disease of the naso-pharnyx, varying from a slight and apparently sore throat, with little or no constitutional symptoms (catarrhal diphtheria), to an exudative malignant affection, capable of destroying life, and invariably producing the most profound constitutional disturbance. We know that epidemics of simple sore throat are closely associated with epidemic diphtheria. With the coming or going of an epidemic of diphtheria especially, as well as during its maximum dissemination throughout a community, we observe many cases which, while they do not present the typical characters of diphtheria and the diphtheritic micrococcus can not be found in the pharyngeal secretions, are nevertheless due to the same influence as diphtheria proper. When diphtheria exists in a family of several persons, it is often observed that apparently simple sore throat will appear in some members of the family, while others are affected with genuine diphtheria, and that the simple cases often become transformed into the more malignant type. Physicians in attendance upon cases of diphtheria are often affected by sore throat of greater or less severity; this being my own experience whenever I attend cases of this character for any length of time. A defective drain has been known to affect different members of the same family with morbid conditions of the throat, varying from trifling soreness to malignant diptheria and also with varying types of essential fever.

Now, what is the reason that these so-called specific poisons manifest themselves so differently under apparently

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identical circumstances? Simply a varying virulency of the poison upon the one hand, and varying susceptibility upon the other, these variations being comprehensible to me only upon the hypothesis of evolutionary changes in the germ as well as in the field of action, i. e., the human system. Let us consider this hypothesis, and see if the variation of the phenomena of disease is not dependent upon a variation in what has heretofore been considered an unvarying entity—a specific germ—and if even the noxious or poisonous property of the germ may not be an ingraft upon it, or at least a matter of development. Let us take as our first point of departure those innocent germs, cocci, or, if you please, minute organized particles which everywhere exist in the atmosphere. These germs multiply by their own peculiar method of procreation, and such multiplication is favored or opposed, as the case may be, according to their environment. Filth, heat and moisture, and protection from air and light favor the development of many such organisms. It is obvious that successive crops of germs are possessed of properties which diverge more or less from the parent stock. This is a universal law that applies to all living organisms. The newly acquired properties are modified or varied according to varying circumstances of environment. Whether it is the germs proper, their secretions or excretions if such there be, or new and complex compounds produced by their action upon putrescible matter, that produce their peculiar effects upon organisms more highly differentiated than themselves,it would be difficult to determine, but it is at least conceivable that sooner or later in the process of evolution, germs are developed which are possessed of properties by virtue of which they are capable of producing definite effects upon the human system. Thus we have by evolution, the spontaneous generation of so-called specific poisons. Now, I do not say that the germs themselves are spontaneously developed, for while such an event is perhaps possible, it is as yet disputed

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by the best scientific authorities. What I do claim is, that the poison of disease may be developed by the evolution of, and acquirement of new and toxic properties, by germs which were primarily innocuous.

Having arrived at a stage of development when it is capable of producing definite morbid results upon the system, we might suppose that this germ would cause invariably similar effects upon the human economy. But the law of evolution still follows the germ of disease in its tour of mischief, and as I have attempted to show from a clinical standpoint, modifies the resulting phases of disease most markedly, independently of the special properties of the individual germ.

The conditions modifying the result of germ infection are, as nearly as I can understand them, as follows:

1. The degree of virulency and vitality of the germ at the time it enters the tissues or blood of a human being.

2. The inherent vitality of the individual, or his resisting power at the time of infection.

3. Individual susceptibility to the particular disease represented by the germ, i. e., indiosyncrasy.

4. The condition of the eliminative apparatus of the person affected.

5. If the disease germ has a special predilection for any peculiar tissue, the result will be modified by the condition of that tissue at the time of its infection, e. g., the typhoid bacillus and the coma bacillus of cholera Asiatica most readily affect those who have morbid conditions of the alimentary canal. Diphtheria is most apt to attack persons with acute or chronic naso-pharyngeal disease.

6. And one of the most important of all, the number of germs and the length of time during which the patient is exposed to their influence.

The local venereal diseases, and in this category I include not only gonorrhoea and chrancroid, but their congeners,

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such as herpes, balanitis, simple urethritis, etc., are, it appears to me, among the best illustrations that we have of the evolution of the poisons of infectious diseases. The idea that gonorrhoea and chancroid are diseases which have been inseparable from the human species is certainly untenable. Somewhere along the line of our ancestry chancroid and gonorrhoea appeared, but at what time history does not tell us. The human race in general must have begun existence with a considerable capital in the form of healthy organization, and every infectious disease which now affects unfortunate humanity, must necessarily have developed since the species or its primeval stock originated. As the races have become differentiated, or have diverged, new circumstances of environment have been encountered which have modified the organism of the human being, and in the course of evolutionary progression, many and various diseases have arisen.

This fact has been due to:

1. The appearance upon the scene of weaker and more susceptible organizations than those of the parent stock.

2. Changes of telluric and climatic influences.

3. Injuries and vicissitudes experienced in the struggle for existence, modifying the organisms of numerous individuals, such modifications being transmitted to their descendants.

4. Varying character and quantity of food and drink, alchoholics within a considerable number of generations having exerted a marked influence.

5. Varying sanitary circumstances, involving crowd poison and other forms of noxious and contaminating animal matter.

6. Varying personal hygiene, involving cleanliness, exposure to wet and cold, and other influences which may modify individual constitutions. The question of sexual habits here enters into consideration, and is necessarily of

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especial importance in its bearing upon the evolution of the venereal diseases.

7. The gradual and certain evolution and differentiation of, and acquirement of new properties by, living germs.

So much for the acquirement of disease in general.

Gonorrhoea and chancroid have probably arisen in a manner precisely similar to the evolution of other infectious diseases, and while it is premature to say that the poisons of the two diseases are precisely identical, I am firmly convinced that they are different in degrees rather than kind, and of a similar origin to say the least. We are not lacking in authorities who believe them to be precisely the same. Dr. R. W. Taylor is one of the leading authorities who claim that chancroid is not a specific disease in the sense that we speak of variola, and that, moreover, its poisonous secretion is precisely the same as that of gonorrhoea. Dr. F. R. Sturgis also holds this view.

The origin of gonorrhoea and chancroid must necessarily be the same, if the evolutionary theory of their origin be correct. The vagina of the female is as excellent a nidus or hot-bed for the generation of poison as could be well imagined, and when we consider the large number of women who are affected by uterine or vaginal diseases, it is a matter of wonderment that the venereal affections are so few in number and manifestations.

There exists, even in perfectly healthy women, the circumstances of heat, moisture, protection from air and light, and the occurrence very often of local irritation in the form of excessive co-habitation. Superadd to these normal or quasi-normal conditions a suitable pabulum for the development of germs in the form of uterine or seminal discharges, and we are apt to have conditions decidedly detrimental, not only to the woman herself, but to the generative organ of any one with whom she may chance to have sexual congress. Few women are free from disease; indeed, the woman who is

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perfectly sound is a *rara avis*, and in the uterine discharges bacteria may develop and wax fat. Many women, through ignorance in some cases, through natural physical indifference in others, are exceedingly unclean, and allow both natural and unnatural secretions to accumulate until the condition of their sexual organ is indeed filthy. This is especially the case in the low-class prostitutes, and unfortunately it is often the case among women who are resectable or quasi-respectable, if respectability and dirt can possibly be associated. As has been remarked by others, in connection with the subject of urethritis and chancroid, the high-toned prostitute is not so open to impeachment upon the source of uncleanliness as those of a lower grade. In a general way it may be said that if every man could view for himself the actual condition of most of the women of easy virtue with whom he is brought in contact, there would be a decided improvement in the moral tone of the community. may also add, that with the present unhealthy manner of living in vogue among the fair sex, many young men would give up all romantic ideas of matrimony, if they could but inspect the object of their ambition through the speculum of the gynecologist. So much for uncleanliness and disease, independent of the question of virtue and morals.

As the circumstances of uncleanliness,unhealthy secretions, local irritations, heat, moisture, and deprivation of free air and light favors the development of germs, and particularly those of decomposition, it may be readily understood that after a time such bacterial development actually takes place in the vaginae of some women. The innocuous germs of the atmosphere enter and begin their work of procreation or multiplication in an environment scanty in its supply of oxygen, decomposition occurs, and *pari passu* with it new germs appear upon the scene, which differ from the parent stock, and so the process goes on until a very irritating poison is developed. If during this time the discharge from

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a diseased urethra be added to the noxious materials, or if semen be deposited in this hot-bed of putrefaction, so much the better for the development of a "specific" poison. Selmi and Gautier have shown that poisonous alkaloids develop from putrefaction, and it is to those poisonous substances or ptomaines that I am inclined to attribute the trouble in gonorrhoea and chancroid. The decomposition of semen is especially likely to produce such a poison. If this be correct, it is to the products of the bacteria, rather than to the bacteria themselves, that we must attribute the result of chancroidal and gonorrhoeal secretions. It is, therefore, assumed that while bacteria may be present in cases of gonorrhoea and chancroid, they are by no means necessarily so. This would explain why scientific observers have found bacteria or cocci in some cases, while they have been unable to do so in others. The varying degree of acridity and quantity of ptomaines, and the varying susceptibility of mucous membranes would explain the differences which appear to exist between gonorrhoea and chancroid, as well as between mild and severe types of the same disease.

Now, as to the conditions which modify the results of the virus generated *de novo* in the human vigina. These are as follows:

a. It is obvious that much depends on: 1, the age of the decomposition; 2, the degree of inflammation present; 3, the frequency of coitus; 4, the constitution and habits of the woman; 5, the character of any semen or urethral discharges which may be deposited in the vagina; 6, the degree of cleanliness of the woman.

b. The amount and degree of virulency of the virus deposited upon the absorbent surface in another individual.

c. The cleanliness, local and constitutional condition, habits, sexual hygiene of the recipient of the cultivated virus.

d. Individual predisposition.

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There are many arguments which I might advance as showing the co-relation of the so-called specific local venereal affections and those of an apparently simple character, but as my paper is already longer than I had intended, I will not impose further upon the good nature of my audience.

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DIAGNOSIS OF TYPHOID FEVER.

J. H. WALLACE, M. D., MONMOUTH.

In presenting this paper, our object is to raise our protest against the common custom of calling all cases of continued fever, typhoid. In doing so, we shall make no special claims to originality, but shall present the facts as we have seen and understood them in genuine cases of typhoid fever. We will not rest our diagnosis simply on some prevalent belief based on the fashion of the times, but on the more permanent facts of past experience.

To be of practical importance to the patient, our diagnosis must be based on the careful study and examination of the symptoms presented during life, and not on the phenomena observed after death. It is important to inquire how shall we determine during the onset, or the progress of the disease, that the case is one of typhoid fever? In an ante-mortem diagnosis we need not be deprived of information gained by the confirmation of certain diagnostic facts, obtained in the post-mortem investigations of the past. A typhoid *state* is not typhoid fever, as is so frequently claimed for it; hence, this feature will only be considered incidentally, as a typhoid condition may be present in very many dissimilar maladies but only present in its perfect form in a genuine case of typhoid fever.

There are certain symptoms in common in all types of continued fever. Dr. N. S. Davis, Practice of Medicine, page 65, says: "In classing all cases of continued

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fever under the head of typhoid and typhus they ignore some of the plainest facts of clinical experience and place in the same group, cases essentially different in causation, symptoms and pathological results. It remains, therefore, for us to detect minute differences." The onset in typhoid fever is more gradual than that of any other fever; coming on insidiously and without premonitory symptoms. Past experience has led to the common belief that the disease is due to a poison generated by decomposing organic matter and received into the body from without, and that in connection with alimentation, while there are a few who insist that, in some instances at least, the disease originates spontaneously, and it is our conviction that there is ample grounds for such an opinion. Besides a purely foreign mode of generation of the poison, it would appear capable of being produced within the body itself out of its own substance. Dr. Davis, Practice of Medicine, page 79, says: "It is my duty to warn you, gentlemen, against the doctrine that the typhoid fever poison never originates *de novo* from any amount or kind of decomposing animal excrements unless the typhoid germ be present. There is not that uniformity in the origin of typhoid fever which is found in intermittent, remittent and yellow fevers, where we can give name to the cause and study the law of its diffusion. There are no special conditions of air, or earth, or seasons necessary to develop it. Cases are met with at all seasons of the year, in all climates and in all portions of the habitable globe, and amongst all varieties or nationalities of people." "Two things, at least, are necessary to bring about a case of typhoid fever. First, the poison, from whatever source originating; and second, the person liable to be poisoned, as it is only on a predisposed body that the poison will act." It matters not whether this poison be a "material ponderable substance or an immaterial pówer or force, it is associated with ponderable matter and becomes known to us only by means of such association."

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Whatever this power is, it acts slowly in the majority, if not in all cases; the patients ailing for weeks and even months before any of the distinctive features of the fever can be recognized, and then they creep on one by one, as before intimated. It is not necessary in every instance, however, for the purpose of diagnosis, that we recognize the exciting or predisposing cause. The time that elapses from the exposure, if due to exposure, may not be so long in every case, but commonly you may detect this stealthy on-coming in the history of nearly every instance of typhoid fever. What, then, are the indications? How shall we determine that the case is one of typhoid fever? We reply, by definite or specific signs, manifest in their peculiar manner, coupled with and constituting a part of the aforesaid history of the case, the same as that of any other disease. As for example, "the manifestations of the virus in small-pox are peculiar to itself. The same is true of the specific poison of scarlatina or measles; each is manifest in its own peculiar way. There is no relationship existing between typhoid fever and scarlatina; each is after its kind and is induced by its specific poison or special cause." The same fact is undoubtedly true of the various types of continued fever, and especially so of typhoid. The symptoms characterizing the onset of typhoid fever are very much less marked than those of most other fevers, and in a majority of instances the fever sets in stealthily. It is not unusual for patients with typhoid fever to go about for some time after the febrile movement has begun. In the majority of cases there is what some authors term a commencing period of variable length, but longer than that of any other fever; seldom less than three weeks, and it may be for a period of three months. The moment of invasion can not be measured, as a rule, by days and hours, as some would lead you to suppose, at least to do so is impossible in practice, and would be of but little importance were it possible.

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There is an apparent lack of the usual vigor and a disposition to tire easily, running through this period preceding an attack of typhoid fever. The patient usually does not consider himself sick, and yet he recognizes the fact that he is not well. He does not feel hungry, but when food is placed before him he eats reasonably well. The perception is dull. It is fatiguing to make mental application. Sleep is not refreshing and the patient is disturbed by dreams. After this period of uncertain duration, a chilliness is felt at intervals for several days and a fever begins. We may seem to have been long in reaching the fever point, but this history alone is one of the strongest evidences we have had as yet, that the case is one of typhoid fever. The very fact that the disease does not manifest decided diagnostic signs during these several weeks of lassitude, previous to other well defined symptoms, such as chills, fever, etc., is in itself an evidence of approaching typhoid fever. Careful observation will detect the effect of the typhoid poison after it has entered the system, in destroying the vitality of a certain amount of organic matter with which it comes in contact. It may not be utterly disorganized, but brought down to a less vital condition. The blood becomes charged with the poison and the process of poisoning goes on gradually. The renewal of the body is imperfect, as shown by the languor, loss of appetite, etc. The influence of the virus is mainly felt upon the nervous system and the effect is apparent on both body and mind, and in no other disease of equal curability is the mind so much oppressed. When the poisoning has reached a certain degree the nervous system takes notice of the partial death, or tissue change, and it is made manifest by a chill or shivering fit. Rigors recur at certain intervals for several days until the fever is established. Another indication of tissue change effecting the nervous system is the pain experienced. This is more marked in the early stages of the disease while there is still sensibility in the nervous

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system, as later on it becomes partially dead and does not feel so acutely. It is customary to hold that the fever begins with the first chill or the first elevation of temperature, and from that standpoint is computed the duration of the different periods of the disease, notwithstanding the fact the patient has been ill for several weeks previous to the onset of any distinct chill or perceptible fever. The chief indication of the presence of fever is a rise in the temperature of the body. Temperature may be febrile, as generally considered, when it rises from two-thirds to nine-tenths of a degree above the normal point for the time of day at which it is observed. Frequent observations of the temperature in suspected typhoid fever give important information from a diagnostic point of view. Wunderlich, and others assert that the febrile condition has certain characters which distinguish typhoid from other fevers. These characteristics being present when other symptoms are obscure, enable us to recognize the true nature of the fever. The range of temperature is one of the strongest diagnostic evidences. A case of typhoid fever may be divided into three periods, from the time of the first distinctive chill, each having its own peculiarities, and each of these periods usually last about one week. During the first week, the temperature has a morning range of moderate febrile rise, but in the evening there is a marked ascent, with a fall again towards morning, each morning and evening showing respectively a higher point than on the previous day, until about the eighth day, when in the ordinary cases the highest point is reached, registering from 103° to 104°, or even 104.5°, in the morning, and from 104° to 105° in the evening. An attack of disease in which on the second day the temperature in the axilla is as high as 104° is not typhoid fever, and the same exclusion applies if from the fourth to the eleventh day the temperature falls below 103°, it is not typhoid fever. A variation in the temperature of from

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1° to 1.5° between the morning and evening is usual. Wilson, in "Annual of the Medical Sciences, 1889," states "that the greatest oscillation between the maximum and the minimum of any twenty-four hours, is found in the first three weeks. From the twenty-second day on the oscillations are less." During the second week less variation is observed as a rule, the temperature remaining at about the degree reached from the eighth to the eleventh day, with the exception of the slight morning and evening variations. Hartshorn asserts "that the marked tendency to a morning fall and evening rise in the temperature is almost pathognomonic of typhoid fever." The pulse, although more rapid than normal, does not correspond to the height of the temperature, and is rarely above one hundred (100) in an ordinary case. In severe and protracted cases, where there is evidence of extensive intestinal ulceration, the pulse becomes more rapid and weak, with a double or dicrotic character, indicating a weakness of the heart's action. In grave cases the pulse beat may reach one hundred and twenty and is small and thready. The above described characteristics represent the pulse throughout the course of the fever. During the premonitory stage, the tongue has a thin, whitish fur, and is slightly red around the tips and edges, but as the disease progresses, it may be even in a few days, change its character and become dry, of a dark red or brown color, and if the case is an aggravated one, glazed, looking like a piece of dry raw beef-steak, and is fissured transversely, while sordes are present about the teeth and lips.

After the disease has entered upon what is usually known as the first week, a very significant feature is the abdominal symptoms. The abdomen is distended. There is tenderness on pressure in the right iliac region, accompanied by gurgling sounds. The peculiar shape of the abdomen in typhoid fever, is by some very aptly described as "pot-bellied," and it is always tympanitic.

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Diarrhoea is sufficiently frequent to be diagnostic, but is not a constant symptom. DaCosta says it is never absent except in unusually mild cases. When diarrhea is present, the discharges are highly characteristic, being of a light yellow, or greenish yellow color. Intestinal hemorrhage accompanying other indications, is strongly confirmatory evidence of the disease.

About the beginning of, or during the course of what is regarded as the second week of the fever, an eruption frequently makes its appearance on the skin. This eruption consists of isolated spots, round in shape, of a pale pink or rose color, from one to two lines in diameter, resembling a flea bite, minus the central puncture. They may occur on the abdomen, chest and back, continuing out for four or five days, then fading away, to be replaced by others, and so continue to the end of the fever, or through the third week. They disappear on pressure, and immediately return on the removal of the pressure. In some cases they are few in number, and it is with difficulty that their presence is made out. In other cases they are numerous, and even show themselves upon the limbs and face. They bear no relation to the severity of the case, but serve merely as a means of diagnosis. Bleeding at the nose is of frequent occurrence, but is not constantly present. "In all cases of suspected typhoid fever, an examination of the urine should be made, as 'Bright's Disease,' and abscess of the kidneys, with blood poisoning, occasion a deceptive likeness to typhoid fever." In Sajou's Manual, 1889, Wilson says that the most marked change in the kidneys is found to be interstitial or diffuse nephitis, probably of septic origin."

Dunn regards our present knowledge inadequate to the solution of the question as to the part played by micro-organic ferments in the causation of typhoid fever. One of DaCosta's diagnostic indications is the duration of the fever, asserting that it lasts fully three weeks, and very frequently

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much longer. We, too, have but little patience with the so called abortive cases of typhoid fever.

From the foregoing course of reasoning, our conclusion must be that any fever that does not have a number of these leading characteristics, should be ruled out by exclusion.

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DISCUSSION ON THE PRACTICE OF MEDICINE.

DR. J. H. HOLLISTER CHICAGO:

I am one of those not engaged in original research, but in studying the results so far as I can obtain them as they seem to become established facts, developed in the present progressive studies of this wonderfully interesting subject. The investigations that are now being made command not only superior talent, but they command also an infinite amount of leisure and painstaking. Those who are not in the midst of the scientific fight, and are not making a specialty of lines of study in microscopy and critical examinations of these subjects cannot speak from personal knowledge and as authorities. But I rejoice to say that there is a large number of men, such men as were never known before marshalled to the subject, who are one by one establishing points which it seems to me in some measure are to clear the mysteries which have surrounded infectious, contagious diseases, and I have no doubt that we are now unveiling a literature upon this subject, which in its development will insure a very great advance, not only in matter of knowledge, but in the intelligent treatment of diseases. In fact, I think we have arrived at that point some time since, and that in matters which more and more command our intelligent action we now surely know the enemy which we are to combat. As to these various pathogenic germs, we are coming to know their methods of development and their methods of control, and by preventing or controlling their development, we, in a large measure, can control the ravages of disease. I do not feel competent to speak of results, nor am I here at this moment to cite cases and the works of men, both in Europe and America, bearing upon this subject. The investigations of this country in the last three years have been such as to give promise of great results in the near future. I am hopeful, and I rejoice that right here in the State of Illinois, there are

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among our own number, men that can produce and place before the Society such papers as I have listened to this morning.

The paper of Dr. Lydston would be creditable in the hands of any critic, and will be found valuable the more we study it. I have listened to it with a great deal of pleasure, much as I feel my incompetency to discuss it.

DR. H. A. JOHNSON, CHICAGO:

The larger problems of medicine, very few of them, have reached a definite solution, and more especially the question in regard to the etiology of such diseases as pneumonia and many others which are now receiving the attention of bacteriologists. They are perhaps incapable of absolute determination in the light of present knowledge; but it seems to me that the methods of our ancestors have all been somewhat along the line of real progress.

In the older works we find the aetiology discussed under two heads, viz.: The predisposing causes, and the producing or determining causes. It seems to me we must never forget that there is an individual and an environment.

I remember when the etiology of pneumonia was sought for entirely in climatic changes. It was thought to be a disease of climate and of seasons. We soon began to find out that the personal condition of the patient had much to do with it. Fatigue, as well as exposure, was the cause. And then it began to be presumed that it was due to exhaustion, errors in diet, and excesses of any kind. The two causes were then combined, as there seemed to be the development of the disease in certain climates and at certain seasons of the year, and it was very liable to attack persons broken down. You will remember, some of you, cases of pneumonia that came on after long and fatiguing work, insufficient sleep, etc.

Then came the era of germs; we began to seek for them and we found they were omnipresent; that they were not only filling the air we breathe, surrounding us on every side, but invading our tissues everywhere. In almost all diseases some germs were found. Pneumonia is now believed to be the result of infection. It seems to me that there are these three factors in its production: 1st. The germ. 2d. The conditions of the individuals, of somatic origin, fatigue, etc. 3d. Climatic conditions that modify germ life and human life, and consequently the susceptibility to the disease.

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Dr. Geo. N. Kreider, Springfield:

The Society is to be congratulated on the progress that has been made in the evolution of diseases in the past year. Those who attended the meeting at Jacksonville last year will recollect that the etiology of pneumonia was discussed at length. The paper of Dr. Carter is an able one. It deals with the subject from a bacteriological standpoint, and I have but one statement to make in regard to it. He places the treatment of pneumonia by baths last. My experience in the last two or three years has been that there is no agent which is so beneficial in the treatment of pneumonia as tepid baths.

The paper of Dr. Lydston particularly interests me, and especially his remarks in regard to diphtheria and allied diseases of the pharynx. These affections can be studied as well from a clinical as from a bacteriological standpoint. I believe both methods of study in the determination of the different varieties and character of these diseases must go hand in hand. We must find out the exact character by bacteriological study. How many of us can say on seeing a case of sore throat whether it is a case of tonsilitis or one of genuine diphtheria? Some of the best authors that have written on this subject are unable to determine from an examination of the throat whether it is diphtheria, sore throat or tonsilitis. It occurs to me that possibly the disease germs which affect the throat are identical, but different in degree, as has been said by Dr. Lydston. Another point which the doctor referred to, and that is with regard to the poison of chancre and chancroid. We all know that for years a great controversy has been going on relative to the unity of this poison, and finally dualists won the day. Hutchinson, I believe, declares that the poison is identical, and that it is only different in degree. Thus in chancre we find the germ itself, probably, while in chancroid we find the ptomaine of the germ, or some such thing as that. How many of us have been confronted with cases in which we were unable to determine, by secondary symptoms, whether we had to deal with chancre or chancroid?

Dr. G. Frank Lydston, said:

There is practically nothing to answer in closing the discussion on my paper, as none of the gentlemen who have spoken have touched

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upon the subject-matter of it. I desire, however, to correct a little error made by Dr. Kreider when discussing my paper. He discussed it from the standpoint of a similarity which he thought that I claimed to exist between chancre and chancroid. I did not mention chancre, to my knowledge, during the course of the paper. He seems to lean toward the theory of the unity of syphilis and chancroid. I think that chancre and chancroid are not only widely distinct, but that there is absolutely nothing in the way of clinical evidence as far as we are able to observe that indicates that they are the same. So it is very evident that I did not touch upon their similarity or dissimilarity in the paper. I simply spoke of the local venereal affections. My acceptation of the term chancre is that it is not a local disease, but a local manifestation of a constitutional disease.

Dr. Kreider made the statement that Jonathan Hutchinson claims that chancre and chancroid are precisely the same. Now, if I interpret Hutchinson's views rightly, he does not say they are exactly the same, but in his recent Lettsomian Lectures, he makes the extraordinary statement that when a patient has chancroid, it is evidence that he has previously had at some time or other syphilis. How Hutchinson can make such a statement I cannot imagine. We see numerous cases in which the initation of the individual in his experience in the venereal war is a soft chancre. We subsequently find the individual contracting true syphilis. I see no evidence in favor of the view of Hutchinson that the chancroid is simply dilute syphilis; i. e. that it bears the same relation to true syphilis that varioloid would to the typical form of variola.

Lest I may be misunderstood, I desire to say, in closing, that I in no sense claim that germs can be spontaneously developed. The essence of my theory is the acquirement of new and various properties by germs primarily harmless; this modification being dependent on varying environment. This much must be granted, viz.: If the evolutionary theory as applied to infectious diseases be incorrect, then we must throw it out of court in all questions of biology. As we study the host, so must we study his parasite. This is a philosophical theory that applies to all germs independently of the isolation of the special germ. In our frantic efforts to catch the "bug," we are apt to drift farther and farther out into the sea of

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biological ignorance. Having accepted the "bug" theory, we should reason upon his life history, even though we may not catch him in every instance.

DR. J. M. G. CARTER, Waukegan:

I have nothing to add to the doctor's remarks upon the diagnosis of typhoid fever; they are sufficiently exact. I did not expect to be called upon to say anything in regard to bacteriology or the germ theory of disease. In my paper this morning I stated that I was not fully given over to the theory of germs producing pneumonia, although I stated in connection with pneumonia that there may be cases where a germ of some kind is the absolute cause of the disease. The same must be true in typhoid fever. According to my early teachings, the disease comes from some deranged condition of the embryological tissues of the body, and this condition of the tissues may come from impressions that are about us every day. They come from lack of proper nourishment, from lack of proper food, from a lack of proper assimilation of the food, and that whenever any tissues of the body are not properly sustained by good air, good water, and good food, there is a diseased condition commenced in the primoidal tissue, and that may extend until the organism as a whole is destroyed. Now, I am not sure how much influence that might have on a germ that has incidentally gotten into the body, because we are drinking them, living upon them, and are with them all the time. But, as Dr. Hollister said this morning, able men are making these bacteriological investigations who know much more about germs than those who are not engaged in that special work. They give the results of these investigations as facts, and it hardly seems the right thing for us to discard them entirely until something better is offered.

I am inclined to think that in typhoid fever, as in other diseases, the deranged condition of the system often comes on and produces fever itself, with all the symptoms of the disease manifested, and yet, upon investigation, it will be found that not a germ is present, as it has been known to be the case in pneumonia. Still it is undoubtedly true that there are many cases where these germs are very abundant, and it is natural for us to refer to these germs as the chief factors in the causation of the disease. If the germs are abundant in a person who is effected by a particu-

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lar disease, and those germs have a specific character, it is very natural for us to conclude that the disease is due to them, yet I must say that it is my own conviction that the proof has not yet been given, so far as my own reading has extended. The proof has not yet been given that the germs are causes rather than concomitants of disease.

DR. N. S. DAVIS, Chicago:

I heard the greater part of the paper by Dr. Wallace, but being behind the speaker, I did not hear distinctly all that was said. But it makes no difference, so far as it relates to the question of diagnosis in typhoid fever. The points, as far as I heard them, were given very carefully, and with a good deal of accuracy, as laid down by the most experienced writers in all countries.

There is no doubt in my mind that a clear, accurate diagnosis is not always preserved in regard to classifying cases of fever. I think very frequently practitioners call a case typhoid fever that turns out to be typhoid. They much more frequently call a case of genuine typhoid fever malarial fever in the beginning, and they only get it over on the right side along about the end of the second or third week, when they can not break it up with quinine, and conclude therefore it is typhoid. That has happened a great many times in years gone by. It was a very common occurrence in the early period of this city, as well as elsewhere. But at the present time, I think the diagnostic features between a mere accidental fever that arises from transient causes, and puts on an aspect of general fever, and proves abortive in a few days, and true typhoid and malarial fevers, are pretty clearly understood, especially where the cases are committed to writing, as in our hospitals and elsewhere, so that there is but little need of discussing the matter of diagnosis.

If we enter upon the field of etiology, we have got enough in that to last all the hours of this session and to-morrow. Probably we should not be able to get through with the germs and ptomaines even then; and we would not be nearer an absolutely clear conviction in our own minds as to what is the cause, what is coincident, and what is the result, than we are now, consequently I shall not enter upon that field of discussion.

There is just one thought in regard to the treatment of typhoid fever that I wish to bring out. It seems to me in my

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watchfulness of typhoid fever cases these many years, that there is in its essential nature pathology, whether the cause be a bacillus, a ptomaine or a lucomaine generated in the system itself, no matter—the causes are such that the one essential feature of the disease in its pathological relations, is an impairment of the forces by which molecular, metabolic or atomic changes in the process of building up and elimination—are profoundly altered and impaired, particularly those molecular changes which constitute what is denominated nutrition. The haemaglobin becomes also impaired in its property of receiving oxygen in its passage through the lungs, and conveying it to the systematic capillaries, and taking carbonic acid gas back to the lungs to be eliminated; in other words, it is not fully oxygenated and decarbonized. This progressive dimunition in the oxygenation and decarbonization of the blood, causing impairment of the molecular movemonts, leads to the universal molecular degeneration in the organs that are generally found on post mortem in the form of softening of the spleen, softening of the glandular structures of the intestines, their dissolution and disappearance, and even softening of the muscular structure of the heart, or fatty molecular degeneration in the tissues generally.

A few years ago some authorities across the Atlantic made statements in regard to the pathology of typhoid fever which were necessarily taken as law. These authorities attributed these molecular degenerations to high temperature, and we were told that high temperature is the danger point in fever, and especially so in typhoid fever, and therefore we must keep down the temperature. Hence it has come to be a regular routine, when called to see a case of typhoid or general fever, or pneumonia, for the practitioner to observe three things—the temperature, pulse and respiration, and that seems to be the sum-total of all knowledge. If the temperature is high, he selects so many grains of some antipyretic. Very little attention seems to be paid to the condition of the skin, intestines, kidneys, the general tone of the nervous system, etc. But very soon it was found this rule did not work well in practice, because I have seen many cases in which the temperature at no time was allowed to go above 103, being kept rigidly below that point by the attending physician, yet the patients lasted till the end of the third or fourth week, and died from exhaustion or perforation of the

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intestines. It was not the high temperature that perforated the intestines surely, because it had not been up to a point sufficiently high. This, then, is an unsafe rule, and we are beginning now to swing back to the fact that we ought to have adhered to from the beginning; that the high temperature is simply a symptom, just as any other symptom that may exist, and is not the cause of the degeneration in any respect whatever. Fighting high temperature is fighting a mere symptom, for just as often as antipyretics reduce it, and their effects are gone, it comes up again. The duration of the disease is not shortened a hair's breadth If you fight high temperature by means of such agents as antipyrin and antifebrin, and that special class to which these belong, you employ agents that diminish the oxygenation and decarbonization of the blood, impair the haemaglobin, and unless great care is exercised while your patient is kept quiet, easy and comfortable, with the temperature below 103, suddenly in the latter part of the third or beginning of the fourth week of the disease, the temperature drops down, the pulse becomes soft and the heart weak, and to strengthen these, you give him whiskey, brandy or eggnogg, and you soon find he begins to look blue or cyanosed, with a more feeble pulse, and in a day or two he is handed over to the sexton to be cared for. Well, do you ask what was the matter with him? If you will study the *modus-operandi* of these complex artificial compounds—antipyretics—you will find that they are powerful and direct impairers of the haemaglobin; and by their use you are asphyxiating the blood, so to speak, and while you want your patient to have plenty of air and ventilation, you asphyxiate him by impairing the functions of the globules of the blood; and I venture to say that the use of this class of antipyretics has decidedly increased the mortality of typhoid fever in the last ten years. And the alcohol you give, thinking to thereby strengthen the heart, acts in a similar way. It diminishes the taking up of oxygen, and diminishes the action of the vaso-motor and respiratory nerves. It is an anaesthetic, and as such, makes the patient feel comfortable, and therefore you are encouraged to continue it until the patient dies, and the family and you are both comforted with the idea that you did what you could for him while he was alive. If, on the other hand, you had given him simple nourishment, and vaso-motor tonics, instead of antipyretics and anaesthetics, he might have tided over the disease and got well.

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I do not oppose reducing temperature when it is too high, but I say reduce it by natural processes, such as sponging or wrapping the patient in a wet sheet, and thereby increasing evaporation, elimination and heat dissipation. Do not turn to the other side and strike at the fountain of vitality by remedies that diminish the function of respiration, the oxygenation and decarbonization of the blood, impair anabolism, and destroy the tone of the nervous system.

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REPORT OF THE COMMITTEE ON SURGERY.

*F. C. Schaefer, M. D., Chicago, Chairman.

Appreciative of the honor bestowed upon me by the Society, it will be my endeavor, as Chairman of the Committee on Surgery, to discharge the duties of the position in compliance with the provisions of our constitution. I shall therefore read a brief report upon the Surgical progress of the past year, and introduce the innovation of a formal discussion; such action having been agreed upon by your Committee, and the questions for the discussion having been issued in advance, hoping thereby to add to the interest of the meeting.

SURGICAL DRESSINGS.

In scanning the field of Surgery, we are compelled to recognize that antiseptic surgery is an established fact. Very few surgeons at the present time have the hardihood to treat wounds without some pretensions to antisepsis, and year by year the aseptic ranks are filling up. We no longer follow blindly in the wake of any one teacher, but are guided more and more by the accumulative results of the constantly-increasing and varied experiences of the strong men of the profession. It would be out of place for me to occupy your valuable time in speaking of the daring operations which only have become possible since the advent of Listerism, and the development of the ideas advanced by this famous surgeon,

*Professor Anatomy, Chicago Medical College; Surgeon Wesley Hospital.

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and although some of the earlier teachings of the originator of antiseptic surgery may to-day appear crude, the surgical world and all mankind must ever owe him a debt of gratitude for the sublime results which have naturally followed his researches. Much as has been written and done in this line, we have never as yet been able to boast of a non-irritating antiseptic dressing for wounds. It remained for the illustrious Lister to crown his work by making this, the latest advance in antiseptic surgery.

An address, by Sir Joseph Lister, on a "New Antseptic Dressing," was delivered November 4, 1889, before the London Medical Society. He was led to his present discovery by a series of interesting experiments, which time will not permit me to report in detail. His work in this direction was commenced several years ago, when he found that the albumen precipitated by the bi-chloride was not, as commonly supposed, an albuminate of mercury, but that the albumen was loosely connected with the latter; also that this precipitate was soluble in blood serum, where it was powerfully antiseptic and not irritating. He took advantage of this fact by preparing a sero-sublimate gauze, which he made use of for some time, but which was not entirely satisfactory. His speech is one of great worth, in that it shows the patient, painstaking, conscientious efforts at every step in trying to solve the problem of producing a non-irritating antiseptic dressing that would retain its antiseptic qualities a sufficient length of time to promote healing in the most satisfactory manner. (He kept constantly in mind the fact that, although Koch had shown that 1-100,000 part of bi-chl. is sufficient to prevent the development of germs in a non-albuminous fluid, when the albumen was present in the fluid, as in the serum of blood at sp. gr. of 1.025, it required 1-1,000 to inhibit the germ development, and of course this made a solution of such strength as might lead to hazardous results by irritation or otherwise.)

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A surgical dressing may be antiseptic and yet not germicidal. It is then inhibitory in its action, it prevents the germs from passing through it into the wound, and such qualities Lister finally claims to have found in the double cyanide of mercury and zinc, and by means of elaborate experimentation he has succeeded in preparing a gauze charged with this double salt. He says the double cyanide requires about 3,000 parts of blood to dissolve it. "If, therefore, it is present in a gauze in the proportion of about 3 per cent., you will easily understand that blood serum may soak through such gauze time after time without washing the ingredient all out; so that it is a material which is admirably stored up in the dressing. That is one of its three great advantages, the others being that while trustworthy as an antiseptic, it is completely unirritating; and under this dressing we find that not only do wounds, the edges of which are brought accurately together, unite beautifully by first intention, but even granulating sores heal by the gradual process of cicatrization from the edges—heal by scabbing in a way that we have never seen under any other dressing."

Sterilized Lint. M. Regnier recommends lint sterilized at the temperature of 248 deg. F. for surgical dressings, having himself used it in many operations of various kinds with as good results as with antiseptic dressings. It would certainly be good practice to place this soft aseptic material next to the wound and the antiseptic irritating dressing externally to it until such time as the general introduction of a benignant antiseptic substance.

BONE SURGERY.

Bone Cavities. There appeared in the *American Journal of Medical Science*, September, 1889, a valuable article by Nicholas Senn, giving the history and results of experiments and practice in the treatment of bone cavities with decalcified bone as a substitute for "Schede's moist blood-

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clot method." He takes a fresh tibia of an ox, cuts the bone into sections two inches long, removes the medullary tissue, places the sections into dilute muriatic acid (10 parts), and changes the fluid every few days until the process of decalcification is completed. The bone thus prepared is cut into chips, in line with the long axis of the shaft, about one inch thick. The acid is washed out with a dilute solution of caustic potash. The chips are then placed in a strong solution of bichloride of mercury, 1 to 500, and sealed in a bottle until required for use. Just before using they are placed in a weak antiseptic solution. For cranial wounds or cavities the decalcified bone is cut into disks corresponding to the space to be filled so as to fit accurately into the cranial defect. The disks should be perforated by a number of small openings, to serve as drains for the spaces beneath them. These perforations, he claims, expedite the fixation of the bone *in situ* by permitting an early entrance of granulation tissue, which favors the speedy removal of the implanted disk by substitution with permanent living tissue. Esmarch's bandage having been applied, the cavities are treated as in Schede's method, being thoroughly scraped and cleaned out with a gouge, chisel or sharp spoon. The surgeon, in the language of the author, "must be certain that the line of demarkation between the dead and living tissue has formed; that the involucrum is well developed and the soft parts in a healthy condition." The cavity is made aseptic with bichloride solution and its surfaces covered with iodoform. The chips are packed into the cavity to its full capacity, and the constrictor removed, permitting the blood to form a cement as it fills the interstices. The periosteum is placed over the chips and stitched with cat-gut, the superficial tissue being brought into accurate apposition over all. A capillary drain of cat-gut is placed in the lower angle of the wound. Aseptic silk is placed next to the wound, sublimated moss and cotton over the whole in thick cushion. The wound is

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kept at rest, using splints when possible. No change of dressing for two weeks unless otherwise indicated. The defective bone of the cranium is beveled at the expense of the inner table, so that the margin of the opening overlaps the disk, thus holding it in position; or the disk may be nailed in with bone pegs. Subsequent treatment corresponds to that of other cavities, exclusive of splints. The head should, however, be kept at rest. The author concludes that

"1. Antiseptic decalcified bone is the best substitute for living bone grafts in the restoration of a loss of substance in bone.

2. In the treatment of bone cavities, antiseptic decalcified bone is preferable to Schede's blood-clot, as it is not only a perfectly aseptic, but at the same time also a strongly antiseptic substance.

3 By this treatment patients recover in a few weeks instead of often months, as in the old methods of treatment.

4. Implantation of a plate or disk of antiseptic decalcified bone into a cranial defect may be relied upon as a hæmostatic measure in arresting bleeding from the vessels of the diploe, it constitutes a good temporary substitute for the lost portion of the cranium, it prevents the direct union of the brain or its envelopes with the pericranium, and, finally, it furnishes the most favorable condition for the production of new bone from the margins and the closure of the remaining defect by a firm and unyielding membrane.

5. The packing of an aseptic bone cavity with chips of antiseptic decalcified bone guards against unnecessary loss of blood and exerts a potent influence in the prevention of infection by pus microbes that might have remained upon the surface of the wound or in the tissues.

6. Capillary drainage by an absorbable drain should be established after implantation for the purpose of preventing the accumulation of more blood in the wound than is necessary to form a temporary cement substance between the bone

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chips and between the contents of the cavity and the surrounding tissues.

7. In the treatment of an aseptic bone cavity by implantation of chips of antiseptic decalcified bone, the packing answers the purpose of an antiseptic tampon, and furnishes the best medium for the growth and development of the tissue resulting from the generative process initiated by the trauma.

8. Secondary implantation can be successfully practiced in the treatment of a suppurating bone cavity after suppuration has ceased, and the cavity can be transformed into the same favorable conditions for healing as an aseptic wound."

The introduction of decalcified bone chips in the treatment of bone cavities is, in our judgment, a valuable aid in their cure. Whether it will be a substitute for Schede's method of using the blood-clot, time and varied experience must demonstrate. The theory of the treatment by blood-clot applies to the bone substitute. "It serves as a temporary nidus for the granulations which permeate it from all directions, thus placing the cavity in a condition capable of being filled with a mass of granulation tissue and a reticulum of blood vessels, which furnish ample nutrition for the growth and development of the new tissue, while the blood is removed by the encroaching granulations." All things considered, the blood-clot should be more readily absorbed than the bone tissue, as the latter is an unorganized structure. It is therefore possible that, in very large cavities, the bone chips will give a longer support to the temporary vessels than the blood-clot can give, and to your reporter's mind, it would be wise to use Schede's method in small cavities and the Senn plan in the larger cavities, subject to future study.

Bone Dowels. Apropos of the foregoing, I present the summary of the experiences of Drs. W. Barton Hopkins and C. B. Penrose with bone dowels. They conducted a series of experiments upon dogs. Their deductions were:

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" 1. That when sterilized dead bone is placed, under favorable circumstances, in contact with living bone, it undergoes organization. When, on the other hand, it is acted upon by the periosteum, it is absorbed, and when placed in the medullary cavity in not too large bulk, organization, combined with absorption, takes place; evidenced by the pressure of blood vessels continuous with and extending from the living bone.

2. The processes go on perhaps most actively between the fifth and eighth weeks, and are not necessarily associated with any inflammatory action.

3. That, therefore, where these dowels are employed to pin together fragments of bone after fracture, to fix the extremities of bones after resection, or for any other mechanical purposes in surgery to which they are adapted, they may be relied upon to do their work for one month or six weeks, and hence to give ample time for union to occur. After this, their presence being no longer required, they gradually lose their identity and disappear."

ABDOMINAL SURGERY.

Perityphlitis. At a meeting of the British Medical Association, August, 1889, Dr. Frederick Treves opened a discussion upon the subject of typhlitis, characterizing it as a local form of peritonitis, and ventured the assertion that the appendix vermiformis is entirely surrounded by peritoneum. In twenty-five autopsies, fæcal accretions were present in half the cases. Typhlitis occurs in various degrees. First, there was the mild, common form which usually ended in resolution. This generally depended upon fæcal lodgment in the cæcum, and was large and doughy. A second form was more severe and led to suppuration, in which there was often a history of cold or injury. A third form was the relapsing typhlitis. He advised operation in the second class of cases, saying it was seldom necessary to make an incision

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during the first week. In most cases the incision should be made after the first week, when the abscess is usually found encysted and there is no danger of opening the peritoneum.

Scraping, he regards as criminal. He advised free incision and search for foreign bodies, and says the less done with the appendix the better, as the state of the tissues was not such as to favor plastic operations. The fistula in the cæcum would do well in most cases if left alone with rest and a careful selection of food. The proper treatment for relapsing typhlitis is removal of the appendix, but the operation should not be performed until all inflammatory and other symptoms have quite subsided.

"The incision should be made obliquely from above, downward and inward over the cæcal region, its lower extremity ending just external to the epigastric artery. The incision should not be made directly over the appendix or over the dullest region. If it be so placed, a number of adhesions will probably be encountered, and the demonstration of the peritoneal cavity might be difficult. The cæcum or the appendix might be actually adherent to the anterior abdominal wall. The incising of the peritoneum should, therefore, be conducted with the very greatest care. It is well that the parietal cut should open the abdomen at a point just beyond the diseased area, and where no adhesions exist. When the appendix and cæcum are exposed, the area of the operation should be cut off from the general abdominal cavity by sponges. If this plugging with sponges be well carried out, no blood should enter the peritoneal space. All adhesions should be divided by cutting; none should be "broken down." The latter measure is apt to tear the bowel, or, at least, to bare it of peritoneum. The appendix should be lightly clamped close to the cæcum, and should be divided about half an inch from that intestine; it should not be secured by a simple ligature. The mucous membrane should be united by many fine sutures, or by a continuous suture;

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then the divided outer walls of the process should be brought together by a second row of sutures; it is practically impossible to bring the serous coats together. To still further secure the orifice, the stump of the appendix might be lightly attached to any adjacent surface of the peritoneum. The abdominal wound should be closed; no drain is required."

During the past year Drs. Lee and Murphy, of Chicago, published an interesting article upon peri-typhlitis. They claim that peri-typhlitis vermicularis always belongs to the province of surgery, and that the following two points are proven: 1. That peri-typhlitis is always accompanied by a pus cavity. 2. That with the present plan of treatment the patient is more liable to a recurrence of the disease. It will be observed that Treves calls these recurring cases relapsing typhlitis, and places them in his third class, as above. They refer to autopsies and statistics given by Kraft, of Lausanne, Paulier and themselves. The former claims to have operated eight times in the absence of fluctuation, redness or swelling of the abdominal wall, and found pus in each case, and all thirteen of their own cases also contained pus. They especially invite the attention of the profession to cases in which there is only a small induration in the ilio-cæcal region, with the accompanying symptoms of peri-typhlitis, before there is the slightest evidence of fluctuation or phlegmon in the abdominal wall, and give it as their conviction that within a few years every case of peri-typhlitis, when diagnosticated, will be immediately cut down upon, the appendix ligated, if possible, and amputated. An important claim brought out by their paper is to the effect that one-eighth of the circumference of the appendix is uncovered by peritoneum (contradicting Treves , which leads them to introduce the postulate: "As pus within the base of the appendix accumulates it meets the least resistance at this uncovered point, and therefore it frequently ruptures through this point of least resistance into the pelvic cellular tissue, making the peri-typhlitic abscess

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extra peritoneal." Statistics in this paper indicate that the mortality rate is greatly diminished by early operations. In Noyes' cases (100), of those operated upon after eight days, 17 per cent. died; of those operated upon before the eighth day, only 8½ per cent. proved fatal. Bull operated upon 17 early; 15 recovered. Kraft had 8 early operations; all got well. Deahne did 8 early operations, with 8 successes. Lee and Murphy, 12 cases; 10 recoveries. It is gratifying to find such results, and your reporter takes pleasure in reporting the paper.

Herniotomy. Since our last meeting this subject received considerable attention from various societies, and especially at the last meeting of the New York State Medical Association. Almost every method of operating had its advocate. Dr. J. D. Bryant, of New York, after another year's experience with his comparatively new method of weaving the sack into the pillars of the ring, concludes that the method can not be used indiscriminately, mentioning exceptions as follows:

1. The sack may be illy developed. 2. It may be so much damaged by isolation that it will be unwise to hope for particular benefit from the weaving process, even if it be possible to employ it. 3. Frequently the external pillar of the ring may be found to be so narrow and attenuated as to render the slitting impracticable. After twisting the sack, he now sutures only part way across it to prevent its subsequent strangulation.

Digital Divulsion of the Pylorus for Cicatricial Stenosis (Loreta's operation, '87), has hitherto been confined to Italy; it has, however, been resorted to a sufficient number of times to merit some attention. In our country, it has been done by McBurney, Bull and Barton; statistics of the operation were presented by Barton, of Philadelphia, at the last meeting of the American Surgical Association. He reported 25 cases, 8 operators, the majority of them in Italy; percentage of deaths, 44; percentage of recoveries, 56.

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Gastrostomy. A new method, through thoracic wall.

Dr. Eugene Hahn recently originated and introduced a new operation, which he described, March 15, 1890, in the *Centralblatt fur Chirurgie.* He makes an incision one cm. from, and parallel with, the left costal arch, five to six cms. long; opens the peritoneum to the same extent; next, a second incision is made through the skin and muscular tissue of the eighth intercostal space, close to the point of union of the eighth and ninth rib cartilages, extending obliquely from above and within downwards and outwards, and the parietal peritoneum is carefully opened with forceps or knife. Then he inserts the left thumb and index finger through the first incision, seizes a portion of the stomach near the fundus, and takes hold of the same with forceps thrust through the second opening, and draws it through this opening in the eighth intercostal space, so that it projects one cm. beyond the skin. After covering the abdominal incision with iodoform gauze, he stitches the serous coat of the stomach to the parieties, if the stomach is to be opened after a few days; should it, however, be desirable to open the viscus immediately, the stitches should be carried through the serous, muscular and mucous coats. Lastly, he closes the abdominal wound. After repeated experiments with long needles, upon a variety of cadavers with different sized chests, he demonstrated to his entire satisfaction that the diaphragm is invariably outside of the proposed point for the opening of the eighth intercostal space; that the diaphragm, beginning at the cartilage of the seventh rib, extends obliquely outwards, having its origin from the outer portion of the cartilage of the eighth and next arising from the surface of the ninth rib. He also found that in wide, short thoracic walls the needle, in penetrating the seventh intercostal space, came in close proximity to the diaphragm, while in long, narrow walls the seventh intercostal space could also be opened with impunity.

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After having done seven gastrostomies by the abdominal method and eight by this new method, he claims advantages for the latter as follows:

1. A small, contracted stomach can be attached at the thoracic opening with greater ease and less manipulation.

2. The attachment of the stomach at this point is stronger than on the abdominal wall. The contents of the stomach, which are injurious to the stitches, are less liable to come in contact with them, on account of the better closure of the wound.

3. Nutrition is better sustained; no escape of nourishment takes place while pouring the same into the stomach, nor afterwards. The cartilages act like valves.

4. Later, no obturator is necessary. Enlargement of the fistula can not occur, on account of the resistance offered by the cartilages.

Gastro-Enterostomy. A. Selenkow recently reported four gastro-enterostomies for Russia, which, added to the statistics of Rockwitz (*St. Petersburg Medical Wochenschrift*, March, 1890), makes thirty-five known through publication to the present time. Of all operations reported, 43 per cent. proved fatal. Selenkow made many operations upon the cadaver, with a view of rapidly finding the right place in the bowel for attachment to the stomach, but without any satisfactory results. He asserts:

1. That gastro-enterostomy should take a permanent place among major operations, and that it should play the same role in incurable stenosis of the pylorus as tracheotomy in laryngeal stenosis.

2. That it is an exquisitely humane operation for cases of cancer that can not be extirpated, for it gives great relief from pain and lengthens life. It should be resorted to in cases of stenosis from ulceration or cicatricial contraction, so soon as Loreta's operation can not be carried out.

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3. In order to bring the intestine across the colon without constricting the latter, it must have a long mesentery and should be removed one meter from the duodenum. It should by all means run parallel with the stomach from left to right, and be attached by a broad surface. To insure these conditions, it is necessary to look for the plica duodeno-jejunalis.

4. The fistula should measure from 2 to 3 sq. cm., and should be placed in the greater curvature, as near the pylorus as possible."

Perforating Wounds of the Abdomen. Senn's inflation with hydrogen gas, although still popular, must be considered as *sub judice.* Valuable as it is to aid in reaching a diagnosis in some cases, the experience of Dr. H. C. Dalton, of St. Louis, reported September 11, 1889, to the Mississippi Valley Medical Association, contradicts the claim of Dr. Senn, "that rectal insufflation of hydrogen gas is an infallible test in the diagnosis of visceral injury of the gastro-intestinal canal in penetrating wounds of the abdomen," and certainly unsettles the status of the test. The medico-legal aspect of this subject must present itself forcibly to the mind of every operator when confronted with one of these emergency cases.

The question, therefore, arises, What is the true status of this test at the present hour? Dr. Dalton reported two instructive cases:

Case 1 responded to the test, but the over-distended bowels were replaced with the utmost difficulty after the sutures had given way, permitting the escape of the fæces into the peritoneal cavity. An unsuccessful attempt had been previously made to "get rid of the gas by washing out the stomach and putting a cylindrical speculum into the rectum to facilitate its escape."

Case 2 did not respond to the gas test. This was a Chinaman, aged 25 years, who was shot by a negro one hour before his admission into the hospital. The shot was fired at a distance of ten feet; the bullet entered between the

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fourth and fifth ribs in the left axillary line. Pulse 100, and temperature 100 deg. F., four hours after injury. The doctor resected a rib, found a hole in the diaphragm, carried a glass tube through it and applied the hydrogen test, with negative results. He therefore concluded the viscera were not perforated, and treated his patient accordingly, who died twenty-eight hours after the infliction of the injury. Autopsy revealed a large, lacerated wound of the left kidney, and two holes in the greater curvature of the stomach (four inches below cardia), close together. The lower third of the stomach was occupied by semi-solid food consisting of rice. This plugged the wounds and permitted the gas to pass on *via naturalis* above. There were no symptoms in life to indicate a wound of the kidney or stomach.

During anæsthesia, the patient came near dying, owing to the gaseous pressure on the diaphragm. His experience has led him to object to the gas test in most gun-shot wounds, for the following reasons:

"1. Because it is misleading, not being *always* reliable.

2. Because, even if it give negative results, we should operate anyway, as we are not sure that the intestines are not perforated, and statistics give but poor encouragement to those who adopt the do-nothing plan, the recoveries in such cases being less than 8 per cent.

3. Because, even were we positive the intestines were uninjured, there are other organs which are almost equally important, such as the liver, spleen, mesentery, etc., which might require prompt attention.

4. Because there is danger of the gas forcing fæces through the wounds into the peritoneal cavity.

5. Because of the additional danger during anæsthesia from interference with respiration.

6. Because of the liability of the sutured holes to be torn open while handling the intestines, especially during the effort to return them to the peritoneal cavity, as in Case 1.

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7. Because after their return to the cavity, owing to their distended condition, and the consequent pressure upon the diaphragm, it embarasses respiration, *and hence adds to the shock.*"

In regard to the incision in the treatment of perforated wounds of the abdomen, the consensus of opinion of the members of the American Surgical Association, at their last meeting, was in favor of the median cut, although Dr. Keen, of Philadelphia, advocated an incision at the point of entrance of stab wounds, but in gun-shot wounds invariably in the median line.

Nephro-Lithotomy. This operation, though only nine years old, has taken a permanent position among the major operations, and since Dr. Morris' first successful deliberate attack upon the kidney for the operation of nephro-lithotomy in 1880 (London), a considerable number of successful operations have been reported. E. L. Keys, of New York, reported a series of cases at Albany last February, before the New York State Medical Society. His reflections have led him to give the following deductions:

"1. The posterior exploratory incision upon a kidney supposed to contain stone is devoid of any serious danger when performed with proper care, and should be resorted to more often than is at this date sanctioned by general surgical opinion.

2. The best incision is the transverse, below the twelfth rib, with as much of a liberating incision downwards along the line of the edge of the quadratus as may be required to give ample room.

3. The kidney may be freely cut into and rudely lacerated with the finger, when the stone calls for it, without producing any hemorrhage which hot irrigation will not control.

4. It is better in large, branching calculus, to break it up and extract it in fragments rather than to attempt to remove it entire.

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5. So little danger attaches to the posterior incision that it seems wiser always to make it the first step, reserving the peritoneal exploration for a later resource in cases where the posterior exploration miscarries.

Malignant Diseases of the Rectum. In view of the fact that excision of the rectum is more frequently done of late than in former years, and that the innovation of discarding the old teachings of limiting the operation to growths within a finger's length of the anus has led to the introduction of Kraske's and Alexander's operations, with apparently increasing favor (in our own country), and as the subject is one of very great practical importance to all, we have concluded to introduce it for a formal discussion.

At the last meeting of the British Medical Association, August, 1889, cancer of the rectum received considerable attention. Dr. Harrison Cripps said he had performed 70 operations, 30 excisions and 40 colotomies. With regard to excision, we must select our cases. He was aghast at the mortality obtained by German surgeons (30 to 40 per cent.), which should cause abandonment of the operation. Not more than four or five inches of the bowel, as regarded height from the anus, should be removed; the finger should feel healthy mucous membrane above it when introduced into the anus. If the tumor was fixed, he would not operate unless it was fixed in its posterior wall or in the ischo-rectal fossa. The advantages of colotomy were two-fold; it gave relief and retarded the growth of the malignant disease. The operation should be done as soon as there were any symptoms of obstruction. Lately, he had discarded the lumbar operation for the inguimal incision, influenced by Mr. Herbert Allingham's advocacy of the latter. Its advantages were, first, that the space in which to operate was larger; second, there was less difficulty in finding the bowel.

Dr. Herbert Allingham divided rectal cancer into three groups, for practical purposes. 1. Cases in which the

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growths were small, hard and at the lower part of the rectum. 2. Cases of large, ulcerating, crater-like masses. 3. Cases of disease rapidly spreading and involving all the surrounding structures. He would perform excision only in the first class of cases, when the growth was freely movable and when one could pass the finger freely above it. Colotomy ought to be done early; as soon as there was frequent diarrhœa, pain and straining. It added to the comfort of the patient. He thought the growth of the cancer was slower when the fæces were cut off from it, and that there was less pain. He advocated the inguinal operation.

Mr. Rushton Parker, of Liverpool, said excision of the rectum was rarely advised, and the few operations which had been done were due to individual enterprise. We declined and sometimes sought operations. Some of the unfavorable cases turn out well. The disease should be low down to form excision. He, however, demurred to the view that we should limit excision to cases in which only the lower part of the bowel was involved, and mentioned a case in which he had performed excision where the lower part of growth was four inches from the rectum. He divided the rectum twelve inches from the anus. He advocated Dr. Alexander's plan of removing the coccyx.

Mr. Jessup spoke especially of proctectomy, which he said had been forced into prominence by the German surgeons. He had seven cases to report of his own, all confined to the lower portion of the rectum. In five of his cases, life was considerably extended, and the patients made more comfortable.

In performing the operation, the anus should be dilated or an incision should be made into the rectum. Proctectomy is an operation of limited application in the present state of our knowledge.

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SURGICAL AND MECHANICAL THERAPEUTICS IN DISEASES USUALLY TREATED BY MEDICINE ALONE.

GEO. N. KREIDER, A. B., M. D., SPRINGFIELD.

No fact is more patent nor more pleasing to the intelligent observer of our profession than the ever increasing use of surgical and mechanical appliances for the treatment of diseases formerly treated only by medicines. The too great reliance which was placed on drugs in former years led to the most absurd theories concerning their action and influence and resulted, after homœopathy and kindred dogmas had had their day, in a therapeutic nihilism quite as absurd and cruel as they. Mechanical methods of treatment are slowly but surely trenching on the domain of medicine, and together with that other benevolent giant—Prevention—are destined to narrow down the effective use of drugs to a very small circle and to a very small number. Thorough knowledge of a disease simplifies the treatment of it. Scientific methods of investigation and instruments for testing diseased organs and tissues supply this knowledge, and these methods and instruments are no longer ridiculed, but are the common property of all intelligent practitioners. One of the apparent dangers of the practice now is not that we are too conservative but rather too prone to take up and laud new treatments before they have stood the all-important test of time.

All the dropsies were formerly treated by diuretic or purgative medicines, later by palliative tappings, but now

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the wonders performed by the removal of the cause of many dropsies, ovarian tumors, and kindred abdominal growths, are so common that they are no longer matters of discussion. I do not intend in this paper to touch on these well-known topics, but there are other methods of mechanical relief which are not so well known and of which I may be permitted to speak. For example, who would have thought a few years since of treating erysipelas by anything but large doses of drugs, or of relieving neuralgias of the fifth nerve by anything except hypnotics or sedatives. Hysteria was formerly the name given to cover all of the numerous nervous complaints of females and was a term of ridicule. It received no treatment, and its victim little sympathy, but now we find that mechanical treatment will relieve most of the cases, and it becomes an interesting study to discover the cause and its appropriate relief. It will be my object in this paper to give a resumé of the recent application of treatments other than medical which I have myself used and which I believe are too often overlooked and ignored.

First, let us take that most universal symptom of disease which we are called upon to treat—fever. The style of drug treatment of it has passed successively from quinine to antipyrin, from antipyrin to antifebrin, from antifebrin to phenacetin and so on, aconite and veratrum included, to an unending number of aspirants for its complete conquest. For some years I have ceased to rely upon these drugs for the reduction of fever, or at least have only used them under protest and as adjuncts to the use of water either by sponging, bathing, or the ice-coil. I need only mention here that my ideas on these methods have been fully detailed in papers read before this and other societies. The titles of these papers are: "The treatment of fever by the ice-coil;" "The treatment of puerperal fever by disinfection of the uterine cavity and the use of the ice-coil;" and "The treatment of pneumonia by tepid baths." Since the reading of

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the last named paper at Jacksonville I have treated all the cases of pneumonia coming under my care by bathing or sponging, and can reiterate with emphasis the conclusions then reached. I have also had renewed proofs of the value of the ice-coil in cases of fever in which it was impossible or impracticable to use the bath. Up to the present time I have treated eighteen cases of puerperal fever by the method mentioned above, with two deaths.

At the last meeting of this Society the late lamented Dr. Alex. Darrah read a valuable paper on "the prevention and treatment of summer diseases of children by cool baths," which confirmed me in my estimate of their value. Other mechanical procedures in these cases of summer complaint may be used with good effect. For example, last June I was called upon to treat a four-year-old child in the last stages of dysentery which had been carefully and skilfully treated by the attending physicians. She had a dry tongue, bloody stools, high fever, and was greatly prostrated. Under these circumstances I suggested, and with the aid of her attending physicians carried out a thorough irrigation of the mucous membrane of the colon with a solution of boracic acid followed by a solution of tannic acid. From the time this treatment was commenced the child began to improve and made a perfect recovery. A case of more than usual interest where irrigation was effective in disease of another portion of the alimentary tract was that of Mrs. B., aet. 69, who had suffered for some weeks with symptoms of gastric ulcer. For some months she had experienced burning sensations in the stomach, coming on a few hours after eating. Later she had repeated attacks of vomiting of alkaline mucous. These became more frequent and protracted. Nausea was a constant symptom day and night unless she was quieted by medicines. Finally she vomited bloody mucous and clear blood and the condition of the patient became extreme. She rejected all nutriment, and life was sustained by enemata. To

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quiet the intense pains six ounces of chloroform were inhaled every twenty-four hours. At this time my advice was given by wire to irrigate the stomach. Its use was delayed by fear of the attending physician that she was too weak to endure the operation of passing the tube to the stomach. As a last resort lavage was finally made, and from the hour of its employment improvement in her condition began and continued after repetitions of the lavage to her complete restoration to health. A return of the symptoms some eleven months later does not vitiate the value of the treatment. I have been urged by those acquainted with the history of this case to make known this treatment of gastric ulcer, cancer or dilatation for the benefit of those members of the profession who are possibly not cognizant of its value. Dr. Bodman, of Toledo, O., who was acquainted with the history of this case, writes that it certainly saved her life.

The attention of the profession has been frequently called to the fact that a tight prepuce may so affect the nervous system as to produce reflex disturbances of a serious nature. I have had some interesting cases of nervous disturbance arising from this source which were of course relieved by circumcision. In one case talipes varus existed but disappeared within a week after circumcision. In another case there was partial paralysis of the lower extremities, which was soon recovered from after the operation. Slighter forms of irritation from this cause are so often overlooked and the patients treated for something else that I make it a rule to examine all male children suffering from nervous disturbances for this disability.

A frequent cause of nervous disturbance is to be found in errors of refraction. In a paper read at a meeting of the District Medical Society I have detailed some of my experiences with this difficulty and their relief by properly fitted glasses. Since reading that paper I have had one case in which spasm of the bladder was caused by eye strain, or, at

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least, this symptom has become less frequent since the proper glasses were fitted. In another instance chorea was cured by the same means.

Speaking of neuralgias reminds me of the numerous cases which I have seen where suppuration of the middle ear has been treated for neuralgia until the mastoid cells were invaded and dangerous complications existed. Of course these mistakes were due to ignorance or carelessness, but such ignorance is frequently shown and serves me to emphasize a point which should be made prominent, viz.: that all practitioners should be made so familiar with the instruments for making exact diagnoses and the mechanical treatment which they or some one else should apply for their relief that such mistakes may become impossible. Of course I need only state that these neuralgias were in each case relieved by treatment directed particularly to the ear.

Many of the diseases of the ear can only be relieved by mechanical treatment, and a majority of the operations are such as the general practitioner should be able to perform. Perhaps he may not operate so rapidly or skillfully as the specialist, but just as effectually.

A change in the treatment of erysipelas has already been hinted at, and the new method is doubtless well known to most of my readers. Instead of large doses of chloride of iron, an anæsthetic is given, the affected part is surrounded by slight scarifications, and an antisepic lotion is applied. By this treatment the disease can usually be made to disappear within twenty-four hours.

Speaking of diseases of the skin recalls the importance of warning physicians of the necessity of destroying all suspicious growths in their very incipiency. Every surgeon has been informed by patients that they have had advice from their family physicians to refrain from having anything done with excrescences or tumors which have afterwards gone on to the formation of most dangerous and painful can-

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cers. Very few growths can be said to be without danger, and even if they are harmless, they usually cause a mental worry to the patient which is equal to a disease and which causes him to resort to all sorts of quack remedies for his relief. A full statement of the possibilities of the case will usually gain the ready consent of the patient to their removal, while at the same time any groundless fears may be calmed by the assurance of their lack of danger if taken early. At the present time cancers and similar growths can be cured by being prevented or by being extirpated in the very earliest stage, and this possibility should not be denied to suffering humanity by such advice as "Do not hurt the growth until it hurts you" or "Let well enough alone."

Diphtheria, tonsilitis and their results can usually be better treated with the assistance of mechanical methods than by internal medication alone. In tonsilitis, the endeavor should be to disinfect each crypt by passing to its bottom a fine probe coated with an antiseptic lotion, and when a case is thus treated early I believe much serious trouble can be prevented. After the early stage is passed I find that the steam spray can be used with great advantage. I have the record of one case of diphtheria treated with success in this way. That it was genuine diphtheria was proven by the paralysis which followed. A most interesting case of this character was that of my colleague, Dr. O. B. Babcock, of Rochester. While attending a case of fatal scarlatinal diphtheria, he became affected with the poison himself. In a very short time, despite the use of medicines, douches, syringes and sprays and incisions, his condition became dangerous. The soft palate touched the pharynx, and the œdema of the tonsils was so great that, notwithstanding the uvula was removed, he was left without adequate breathing space. The incisions and stump of the uvula remained perfectly dry, and the tissues were as tense and brawny as a board. In this extreme condition I secured a gasoline stove, a tea-kettle and a piece of

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tin spouting. The stove was placed near the bed and the steam conveyed through the spouting in large quantities to the patient's mouth. So great was the resolving and relaxing effect of the hot vapor that very soon the poisonous material began to exude through the cut surfaces in large quantities, and in due time a cure was effected. By the use of medicines alone this case would undoubtedly have been fatal. I can not leave this region without referring to the excellent progress which has been made in the treatment of catarrhs and nasal diseases by the various modern operations and mechanical procedures. How many cases of deafness, scrofula, anæmia and narrow chest can now be cured by the removal of adenoid vegetations in the pharynx and hypertrophied tonsils which medicines will absolutely fail to relieve? I have in several instances been called on to treat cases of chronic hoarseness which were due to growths on the vocal cords and were, of course, curable by local treatment only, and yet had been treated for months and weeks by internal medicines. O'Dwyer's inventions and the tracheal tubes used in tracheotomy are modern mechanical improvements in the treatment of diseases which were formerly palliated by medicines alone.

Pleurisy which has gone on to effusion is now no longer treated experimentally for the reabsorption of the fluid, but the cavity is drained by surgical and mechanical means, and a failure to cure is the exception. Typhlitis and obstruction of the bowel are boldly attacked, and although my own record in this class of cases is not encouraging, I recognize the fact that my failures are due to too late operations or the difficulties in diagnosis or treatment which others may overcome and which I hope to conquer in the future.

The same statement may be made concerning my experience in the diagnosis and treatment of brain and spinal cord diseases. I have endeavored to apply the proper treatment in two cases of brain disease. Case 1 was Mr. H. E., aet.

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32, clerk, seen simultaneously with Dr. Ryan. On raising from a stooping position in a cellar his head struck a timber with great force, and he was stunned and nauseated by the jar. He kept at work for some days, but was obliged to quit work for a part of a day because of pains and dizziness. About ten days after the receipt of the injury, at an early hour of the morning, we were called to see him. The family had been aroused by hearing him fall heavily to the floor, aud when they reached him he was in a stupor from which he could not be awakened. No history of the injury could be obtained at this time, but later the history and the symptoms made a diagnosis of abscess possible. The symptoms were headache on the right side of the head, vomiting, paralysis or weakness of the left side, hesitation in answering questions, involuntary passages of urine and fæces and gradually increasing coma. There was choke disc on the right side. As the paralysis of the side was general and not local, we were unable to locate the particular spot of the abscess. The patient being in a state of profound coma, the cranium was trephined over the motor centers and a hollow needle passed in different directions. The pus was either not reached or else it was so thick that it would not flow, and the patient died unrelieved. The post-mortem examination the next day revealed a large abscess in the region of the parieto-occipital fissure, which had broken through into the third ventricle and caused death.

Did time permit, I might detail the benefits of suspension and other mechanical treatments of spinal and spinal cord diseases; the effects of hot water in gynecological practice; of early incisions in bone diseases, and numerous other measures not less worthy of discussion, but I have certainly tested your patience and endurance, and will stop with the following conclusions:

1. That mechanical and surgical measures are the most certain in our armamentarium, and are only now assuming their proper position.

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2. That when called to see a case of disease, the first aim of the practitioner should be to determine by proper examination and research whether some mechanical or surgical appliance can not be used in conjunction with, or in place of, medical treatment.

3. That the "do something" which this action implies will be more uniform in its results, more successful in its curative effects, and more pleasing to the patient than the "think something" treatment, which tries every medicine by turns and nothing long, and hopes for beneficial results.

4. That the ability to use exact appliances for the examination of patients and treatment of disease should be possessed by every one attempting practice, and that this ability is only to be obtained by preliminary training and clinical instruction.

5. That treatment of disease in this manner has a tendency to elevate the profession in the eyes of the public, and to dissipate nonsensical sects which divide the profession and waste its energies.

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TOPICAL DISCUSSION ON SURGERY.

I. Malignant Diseases of the Rectum.

(1). *Clinical Diagnosis.*—D. W. Graham, M. D., Chicago.

A bed-side diagnosis of malignant disease of the lower bowel is generally easy, though sometimes difficult and occasionally impossible. We have a group of symptoms common to all organic diseases of the rectum, some or all of which are present in every case in some stage of its progress. There are pain, deterrioration of health, depression of spirits, diarrhœa—watery, bloody or muco-purulent in character, alternating with constipation, amounting often to obstruction, in a greater or less degree, and tenesmus.

The pain may by localized or radiating. When the disease is near the anus the pain is localized but not as prominent as in some trivial affections, as, for instance, fissue of the anus. When the disease is high up the pain is of more diagnostic value and is referred to the thighs, the genitals or about the pelvis.

The failure of health in malignant disease is more progressive and persistent, amounting to a well-pronounced cachexia.

The obstruction to the bowel is rarely so great as in the benign fibrous stricture.

Age of patiemt. Rarely under forty, generally between fifty and seventy.

Duration. Cancer of the rectum destroys life in two or three years or less, so that we can almost absolutely rule out malignancy if the disease in any given case has lasted over two years.

Lymphatic enlargements. If the disease has existed six months or a year without perceptible enlargement of the glands of the

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groin or the upper part of the pelvis, we will be aided in excluding malignancy. If the patient is thin the enlargements can easily be found when present. Their presence or absence will enable us also to determine the propriety of an operation and the kind of an operation.

Physical examination. We rely chiefly on digital examination of the rectum for a diagnosis. The favorite place for malignant deposit is just above the upper border of the sphincter muscle, being about three inches from the anus. The next most common point is between that and the anus. The next is at the upper end of the rectum, at the junction of the rectum with the sigmoid flexure of the colon. These are the three situations where we should expect to find malignant deposit.

The physical characteristics of a malignant growth of the rectum are essentially the same as those of malignant diseases in other situations of the body. We have the hardness, the infiltration, the immobility, the nodular surface, the crater-like form of ulceration which is progressive and non-cicatrizing. These features are all present in some stage of the disease and are absent in other kinds of rectal deposits and ulceration.

Forms of the deposit. There are two typical forms of deposit; one where the disease begins in the mucous structure and grows towards the lumen of the the bowel, as a sessile tumor, but never being pedunculated. While somewhat mobile in the early stage, yet never as much so as a benign growth. Tha other form of deposit is flat, and first appears between the mucous and the muscular coats. It grows upwards and downwards and tends to involve the whole circumference, but does not rapidly encroach on the cavity of the intestine. When we have this form of deposit many of the diagnostic signs are absent or equivocal, and we are obliged to make repeated examinations and await developments.

This might at times be difficult to differentiate from a form of syphilitic inflammation, which differs from the true gummy deposit of tertiary syphilis, but which involves the whole circumference and a considerable extent of the bowels. Fortunately, for the patient and the surgeon, most of the cases of maglignant disease of the rectum, suitable for a radical operation, are easy of diagnosis When there is doubt, a microscopical examination of

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the newer portions of the growth will aid us in arriving at a correct conclusion.

(2). *What are the indications for palliative treatment of malignant diseases of the rectum?*—E. P. Cook, M. D., Mendota.

To restore and maintain the physiological relation of the parts involved in disease and the excreta. To maintain the permeability of that portion of the intestinal canal, and a solubility of the faeces. To prevent the accumulation of faeces above the diseased parts, and to secure an easy passage of feculent matter and gases through the gut. To retard and arrest the development of disease. To relieve pain.

(3). *What are the palliative operations for malignant diseases of the rectum, and what are their relative merits?*—C. Truesdale, M. D., Rock Island.

Construing the inquiries literally, I infer that the operations are such as are strictly surgical.

A pretty constant result of malignant diseases of the rectum is more or less stricture, and resulting in obstruction to the passage of faeces. The first operation that is generally resorted to in the way of palliation, is the use of urethral or rectal bougies, for the purpose of dilating any stricture or strictures which may exist. While there is always an almost irresistible temptation to resort to this as a means of temporary relief, it is of a doubtful utility. My own experience has led me to the conclusion that it is positively injurious. I have never observed even temporary relief following it.

When the conclusion is reached that an operation for radical cure is inadmissable, the less we meddle with the rectum the better. The only thing that is worthy of a trial is an occasional injection with some warm anti-septic solution, such as warm carbolized water, the latter acting, not only as an anti-septic, but also as a sedative.

It is believed that the only operations which can be properly considered palliative, are lumbar and inguinal colotomies, if it be desirable to prolong life, in cases of cancer of the rectum—and such is the universally expressed wish of those who suffer from it—notwithstanding the suffering and the utter want of hope of ultimate cure.

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Whatever may be the circumstances, however, this should be the aim and purpose of the surgeon, and whatever is done, should be done with this end in view first, and second, to secure the least amount of pain and discomfort possible.

It is certain if the rectum can be relieved from the discharge of its functions, the disease will progress more slowly, and the pain and discomfort will be lessened. The only way to accomplish these ends is by colotomy. The rule which has governed surgeons heretofore in determining when to operate, is when the bowel has become occluded. There is a growing sentiment, however, among leading surgeons that this is a mistake. To defer a palliative operation, which promises so fair to relieve pain and prolong life until the powers of the system have become exhausted from long continued suffering, septic poisoning, &c., and when the dangers of an immediately fatal result of the operation are greatly increased, is bad surgery.

If a person has reached the verge of the grave, there is no good reason or propriety in our deliberately pushing him in. When a person is subjected to colotomy, he should receive all the benefits the operation legitimately secures; and in my judgment they can be realized only when it is made immediately after the diagnosis has been clearly determined. There is another aspect in which colotomy should be viewed, and that is as a preliminary step to an operation for radical cure of the disease. This has been suggested heretofore, but to what extent, if at all, it has been acted upon, I can't say. The latter operations have been made less thorough, and at times failed, by reason of the controlling idea on the part of the surgeon that the functions of the bowel must be preserved at all hazards. They have also been embarrassed by an imperfect performance of those functions, notwithstanding the great effort made for their preservation.

In reference to the relative merits of inguinal and lumbar colotomy, it is believed that inguinal is far the better operation. The controlling idea in the minds of the older surgeons was, that lumbar colotomy was the safer, and, therefore, the better, because it avoided opening the peritoneum, of which they had a sort of "holy horror." It was not selected in preference to the other because it was more easily performed, or that the lumbar region

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offered better facilities for making an artificial anus, nor because it was a better and more convenient place for the latter. It is really the more difficult to perform, the opening more difficult to control and maintain. That it avoided opening the peritoneum, as before stated, was the strong argument in its behalf in former times, has become, under modern means and methods of operating, the strong argument against it. Surgeons no longer entertain fear or dread of opening into the peritoneum. It is, therefore, common belief among modern surgeons who have had the largest experience in these operations that inguinal colotomy is the better; that it is equally safe; is in a more convenient location for an artificial anus; is less likely to give trouble from contraction, if properly made; a better spur can be secured; it is believed that the muscles of the abdominal wall can be utilized to some extent as a sphincter; it affords better facilities for clearing out the lower part of the colon of fecal and other irritating matter. I believe the operation should precede any formidable operation for radical cure. It is not improbable that the technique may be so improved as to render important aid in performing the latter. The literature of the subject furnishes an instance in which life was prolonged a year, in comparative comfort, by reason of the operation.

(4). *What are the Radical Operations for Malignant Diseases of the Rectum, and their Relative Merits?*—JOHN E. OWENS, M. D., CHICAGO.

Curative drugs are no more applicable to cancer of the rectum than to the same disease in other parts; and while we are hopeful of the future, and while every State supports its cancer cures, it must be the sense of this Society that there are no clinical facts to support the assertion that any regular physician, or any member of any school of practice, or any of the laity, has knowledge of, or possesses any drug that, when administered internally or locally, can specifically cure cancer or even retard its progress. Caustics can not be included in this category, inasmuch as caustic, being a destructive agent, may destroy a malignant growth when used early and effectively. Its application is limited to small, easily accessible growths. The operative treatment of cancer of the rectum may be briefly considered under two heads, namely, colotomy; or the es-

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tablishment of an artificial anus, or some modification of the operation for diverting the fæces from their passage through the rectum, and thus dispensing with this portion of the bowel as an active organ, and no longer subjecting it to irritation from the presence of effete material; secondly, proctectomy, ablation, or excision of the rectum. The former, which must be looked upon as a palliative measure, has generally been employed for the relief of the disease, wherever situated. Proctectomy is confined to the lower portions of the bowels. It is based on the local origin of cancer, and aims at the complete eradication of the disease. If not attended by any undue mortality or followed by great disadvantages, it should take its stand as an established surgical procedure, and as this procedure becomes perfected, it would seem that it remains to determine in what cases proctectomy should or should not be recommended. Cancer is met with in the upper, the middle or the anal portions of the rectum, or, again, it involves a portion only of the entire circumference of the bowel. Shall we attempt the extirpation of cancer from the higher portions of the rectum—parts beyond the reach of the finger? In the male, shall we advise removal, when the disease is seated on the anterior segment of the rectum, for fear of injury to the urethra, prostate or bladder? Each case should be well considered as to its fitness for the operation, as to the immediate risk of life, as to the amount of benefit to be expected, as to the best method of operation.[1] In the existing state of knowledge and experience it must be conceded that proctectomy is an operation of limited application, and unsuited to more than a minority of cases. When the disease is within easy reach of the finger, and confined to the posterior or lateral portion of the rectum, or situated in the anterior portion of the bowel, and has not infiltrated the tissues outside the muscular wall of the bowel, and when, also, the external sphincter can be preserved, proctectomy is especially indicated; but in those cases where the disease has originated beyond the reach of the finger, or having spread so far from a lower level, the majority of surgeons resort to those other less radical methods which till recently constituted our only resource. If the finger can be passed sufficiently beyond the disease to feel a healthy mucous membrane, so far as the height is concerned a satisfactory removal is possible. Then ascertain whether the disease is still

(1) Cripps.

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confined to the rectum or has passed beyond it into the surrounding tissues. The operation is practicable if the lower part of the vaginal septum or the ischio-rectal fossæ be implicated. On the contrary, if the bladder, prostate, uterus, or the upper part of the vaginal septum be deceased, an operation should not be attempted, because an efficient removal is not possible. Careful digital examination will enable one to ascertain the degree of mobility of the bowel. Rigid fixation contra-indicates excision.[1] The disease has too often assumed uncontrolable proportions before it is brought to the notice of the surgeon, or it may be that from the first, it is situated too high to admit of this kind of interference. Constitutional, as well as local conditions, must be considered. The age of the patient must be taken into account, and disease of the abdominal viscera and glands must be excluded.[1] No operation should be undertaken unless there is a reasonable prospect of being able to thoroughly remove the whole disease. Inasmuch as the passage of fæces over the wound delays the healing and adds to the dangers and suffering of the patient, a preliminary colostomy may prove an advantage in proctectomy. Some surgeons have gone a step further in the preliminary measures, and, instead of opening the bowel and stitching the orifice to the wound, advise colectomy, or the cutting of the bowel clean across. The lower end is closed with catgut and simply left in position while the upper end is brought out and fixed to the skin wound. This insures the discharge of all of the fæces through the artificial anus.[2] Complete freedom from pain is the most marked result of the operation of excision. Care should be taken to prevent contraction during the healing, by the daily introduction of a full sized bougie. The instrument should be left in three or four hours.

So much for what may be conveniently termed the minor operation. The French School established the principal that in operating the peritoneum should not be disturbed. The integrity of the vesical base, the prostate and urethra was by it demanded.

The major operation, namely, that of Kraske, is much more aggressive. It consists in making a median incision from the second sacral vertebra to the anus, severing the left gluteus maximus from the sacrum, detaching the sacral ligamentous connections, exsecting the coccyx, and chiseling away the left lateral mass of

(1) Cripps, (B. M. J.). (2) Banks, (B. M. J.).

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the sacrum in a curved line, which begins at the outer border of the third sacral foramen and terminates at the lower extremety of the of the bone. The posterior branches of the sacral nerves were not considered. The divided surfaces of the bone were smoothed, the tissues and muscles to the rear of the rectum were cut through to the walls of the same. The subject was then placed in the lithotomy position, with elevated pelvis, when the extirpation may be accomplished from the anus to the passage of the rectum into the sigmoid flexure.[1] In order to effect this the anus must be circumcised, and the rectum with its tumor loosened, the outer sphincter being saved. The peritoneum was opened; the rectum was then drawn down so far that it projected, more or less, surrounded by peretoneum. The amputation was then made above the growth. The wound in the peretonium was powdered with iodoform and the gut attached to the pararectal tissues about a thumb's breadth from the anal aperture by catgut sutures. A drainage tube was introduced posteriorly, reaching into the peretoneal cavity. Tampons with idoform gauze, were placed in the rectum and vagina. The wound was left open but tamponed with idoform gauze. The first stool was five days later, and the patient was discharged in five weeks.[2]

Schede has modified Kraske's operation for cancer of the rectum.[3] In his operation, the third sacral foramen, and nerves thereto belonging, were included in the resection. The peritoneal fold was opened, the sigmoid flexure drawn down, and before cutting the gut, the opened peritoneal pouch was stitched to the serous covering of the gut by continuous catgut-suture. The gut was then cut and the ends united by suture. In the second and third operations Schede performed preliminary operations.

All of these operations, in a very large majority of cases, fall far short of the ideal, as far as a radical cure is concerned. So far as I can judge from the current literature, a reaction is already setting in against the more formidable proceeding. While it has been shown that very extensive disease may be removed, and the technique of the operation has been so much improved that nearly any part of the rectum may be reached and rapidly removed, and with

(1) Sarjous, 1889. (2) Kraske, Verhandlungenuder Deustchen Gaseltstschaft für Chirurgie, 14th Congress, 1885. (3) Deutsche Medicinische Wochenschrift, 1887.

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comparative safety as far as the immediate result is concerned, the advisability of such treatment is still far from being established. Many operations are manually possible, but it remains to be shown whether some of them, at least, are surgically justified.

During the last two years, I have made it a rule to advise all patients who have been operated upon for cancer, to report to me, or to some one familiar with incipient cancerous growths, every thirty days. In this way, recurrences can be dealt with very promptly. In my opinion, it is a step in the right direction.

(5). *What are the Comparative Results of the Palliative and Operative Treatments?*—CHRISTIAN FENGER, M. D., CHICAGO.

As to the part of the discussion of the subject of malignant diseases of the rectum allotted to me, I shall first say that the results of palliative and operative treatment can not very well be compared, because each one serves its own limited field of usefulness. The palliative operations will be used where total extirpation of the carcinomatous tissue is either impossible or too dangerous to the life of the patient. Total extirpation should be resorted to whenever there is a possibility of removing all of the diseased tissue without taking the life of the patient.

We will first discuss the palliative operations, which all have the intention of doing away with symptoms of stenosis.

1. *Linear Rectotomy*, as devised by Nelaton, and extensively practiced, especially in France, by Verneuil, Trelat and others. This division of the posterior wall of the rectum for carcinoma in the median line backwards to the coccyx, is made either with knife or cautery, the cautery, however, giving more security against hemorrhage and sepsis. The effect of the operation is often a very beneficial one in reducing the frequent, painful passages to few and painless ones.

As to its dangers, Verneuil estimates the mortality from the operation at about 5 per cent., and he states that the suffering from incontinence is small. This operation can only be made use of in *low* carcinomas, where the finger can reach the upper border of the tumor, and the peritoneal cavity is in no danger of being opened. In regard to this matter, Esmarch states that in the majority of these cases of carcinoma, low down total extirpation is not only

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possible, but easy, and consequently ought to be preferred. It should be limited to cases where the wall of the bladder, the prostate gland, the uterus or the fornix of the vagina have been invaded by carcinoma, making total extirpation inadvisable.

2. Opening into the rectum from the ischio-rectal fossa above the carcinoma, as devised by Marshall. This operation is practically a posterior artificial anus above the carcinoma. Spontaneous fistulous openings in this place had taught Marshall that relief from stenosis symptoms took place. This operation, however, has never been resorted to any extent.

3. Curetting of the carcinoma with the sharp spoon and cauterization of the scraped surface with Paquelin's cautery—curetting as devised by Simon, and cauterization of the curetted surface by Kuster, who has practiced this method of late extensively. He advocates the method very strongly, saying that it affords great relief in inoperable cases. Of 25 to 30 patients, only 2 died from peritonitis, and Kuster estimates the mortality from the operation at about 8 per cent. Many of his patients lived more than a year, and in a comfortable condition. Kuster has thus for years never performed colotomy in low carcinoma. This operation is only applicable in tumors low down in the rectum, because in the carcinomas above the line of the peritoneum surgeons always run the risk of opening into the peritoneal cavity. Esmarch has seen cicatrization take place after this operation, but still calls attention to the dangers of hemorrhage and collapse following this method.

4. *Lumbar Colotomy*, as devised by Amussat and Callisen. This operation has been more extensively practiced by English surgeons, but is now rapidly losing ground and being replaced by the more modern modifications of inguinal colotomy. The mortality from the old statistics was high, between 30 and 40 per cent. This mortality has decreased considerably of late, so as to enable Cripps to report 14 cases without a death. There are certain objections to the method sufficient to prevent its future use. Prominent among these objections is the difficulty of finding the colon and opening into it at a place not covered by the peritoneum. The descending colon has most often a mesentery, and it often necessitates great distension to find sufficient space to open into it without opening into the peritoneal cavity. The wound is always a deep one, and the artificial anus is in an inconvenient place for cleaning away the

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fæces, except in patients who are unable to get out of bed. It is impossible to prevent part of the fæcal matter from passing down to the carcinoma, and it causes the usual irritative effect on the ulcerated surface, and consequently does not relieve the pain and tenesmus. The advocates of the operation, such as Henry Morris, claim for lumbar colotomy a wider application, as for instance, in carcinoma of the sigmoid flexure or lower portion of the descending colon, where inguinal colotomy would give no relief. Knies' modification of inguinal colotomy is practicable on the transverse colon as well as on the cæcum and ascending colon, thus making this claim of advantage somewhat doubtful.

5. *Inguinal Colotomy*, as devised by Littre, or *laparo-colotomy*, is rapidly gaining favor. The mortality of the operation was in early times (Batt and Van Erkelen) even higher than in lumbar colotomy, being from 46 to 53 per cent. This was the consequence of opening into the peritoneal cavity antiseptic precautions against sepsis. The introduction of antiseptic methods here, as in all other intra-abdominal operations, reduced the mortality to the neighborhood of 5 per cent. Koenig reports 20 cases with only one death from peritonitis; Cripps 26 cases, with only one death.

The attempts to perfect inguinal colotomy had in view, besides to guard against infection of the peritoneal cavity, to effect complete evacuation of the fæces in the place of the artificial anus, so as to prevent any fæcal matter from passing down into the carcinoma, thus preventing irritation and painful tenesmus, and, furthermore, to facilitate the washing out of the carcinomatous bowel from above. Closure of the lower bowel, as devised by Madelung, was thus abandoned, and Knies' method, as modified by Maydl, is the one nowadays mostly adapted to fulfill all the indications. When it can be performed in two stages, it must be considered almost without danger from peritonitis, and its advantages, as stated by Koenig, are the following: The operation is done openly, mostly outside of the peritoneal cavity, no fæcal matter can pass over the carcinoma, and this can be easily irrigated and kept clean.

The Radical Operation, that is, the total extirpation of carcinoma, should always be done when it is possible to remove all of the diseased tissue without too great danger to the life of the patient. It is the only hope of a radical cure, and a number of permanent recoveries are on record. In the earliest period only low carcino-

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mas were operated upon, as the dangers to life became almost insurmountable the higher up the carcinoma was located. Modern modifications, especially the sacral method of Kraske, has greatly reduced the dangers for the high carcinomas. The removal of part of the sacrum or its osteoplastic, that is, temporary resection, as devised by Hochenegg, gives ample space for the removal of carcinoma even above the rectum and in the lower portion of the sigmoid flexure. Nevertheless, it can not be disputed that a considerable amount of preliminary operating in the high or sacral operation causes additional danger from hemorrhage, collapse and peritonitis in patients already reduced in vitality by the disease. If we want to consider the danger of the radical operation for carcinomas from a statistical point of view, we meet with the difficulty yet in the literature, that authors did not distinguish sharply enough between high and low operations.

Low and High Operations. From the enormous mortality before Volkmann's time of over 70 per cent., the larger statistics of Piechard, in 1883, comprising 149 cases, the mortality has come down to 36 per cent. By adding the statistics from the literature in 1887 I collected 272 cases, with a mortality of 22 per cent. In the hands of other operators, however, after that time, the mortality was lowered considerably. Thus Koenig gives us a mortality of his operations for the last six years of 16 per cent., and von Bergmann gives us a series of 46 operations with only 3 or 4 deaths, Cripps 30 operations with 2 deaths, Hochenegg 12 operations (from Albert's clinic) with no deaths, Bardenheuer 13 cases with 2 deaths. It may be reasonable to conclude that the mortality of to-day in the proper selection of cases may be estimated at between 10 and 15 per cent.

As to the number of radical cures, it is impossible from the literature to give an estimate, but I should expect a radical cure in about 10 per cent. of the patients that survived the operation.

As to the functional disturbance, comparatively little is known, from the fact that little mention is made of the patient's condition in after years. Koenig takes a rather gloomy view of the condition of such patients, and states that the functional results after the high operation are better than those after the low operation. Of 21 patients, he considers 15 in an unsatisfactory state, always unclean except when constipated, and only 6 had tolerably good power of

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retaining the fæces. Von Bergmann takes a brighter view of the condition of such patients, and so do most other authors, so much so that the functional condition of the patient is not permitted to interfere with the choice of operation between palliative and radical when there is a possibility of saving the life of the patient with the latter method.

II. Senile Prostatic Enlargements.

(1). *Illustrated Description.*—E. Andrews, M. D., Chicago.

Dr. Andrews exhibited numerous enlarged and colored drawings, demonstrating and describing the variations in form, locations and size of enlargements of the prostate.

(2). *What are the Operations for the Relief of Prostatic Obstruction?* —C. Chenoweth, M. D., Decatur.

There are four routes by which the bladder may be reached in operations for the relief of diseased conditions, caused by prostatic enlargements.

1. First, by way of the urethra. Home and Brodie, when not able to pass a catheter by the natural route, forced it through the opposing gland and left it in the bladder. Numerous false passages, (shown post-mortem, by cicatricies) having demonstrated that it had been frequently done, without apparent injury. Gouley, of New York, and Mercier, of Paris, gouged a channel through the opposing prostate, by means of a prostatectatome. Mercier is said to have performed the operation four hundred times, with marked success. Bottini, of Pavia, passed a wire through the prostate and caused a slough by heating the wire with a galvanic current. Dr. Newman, of New York, uses a smooth sound with a piece of platinum wire in a fenestra at its extremity, connected with a galvanic battery. His aim is to cure by electrolysis, or by galvanic absorption.

2. The second route is by the way of the perineum. Reginald Harrison, of Liverpool, cut down on the membranous portion of the urethra, and entered the bladder by cutting with a straight, blunt-pointed knife, and divulsing with the finger. This is the same operation performed by Syme, for stone in the bladder, (Lancet, August, 1855), except that Syme was more careful to hold

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the knife in a particular way. My father, Dr. J. W. Chenoweth, performed the operation three times, but after cutting down to the membranous portion of the urethra, divulsed with the finger, without having occasion to use the knife.

3. The third route is through the rectum. Leopold Caspar, of Berlin, after carefully insulating the needle, guided it through the gland from the rectum, by the finger, and applied a galvanic current of from twelve to fifteen milliamperes for fifteen minutes.

4. The fourth is supra-public. A. F. McGill, of Leeds, advocated this route before the British Medical Association last year, and supported his argument with the history of twenty-four cases occurring in his practice, and that of others.

Of the four routes, the most natural is through the urethra. To pass, or attempt to pass, the catheter, is demanded before anything else is tried. Failure requires a resort to other means. If Mercier's operation has met with such great success, why not Brodie's? The operation through the perienum has been demonstrated to be safe by hundreds of lithotomies, and the many cures of accompanying cystistis argues in favor of its continuance. Drainage by this route is more natural, if not more effectual. As Agnew puts it, "There is no advantage in going on top of a house to get in it, when an entrance can be had on the ground floor." The prostate can be reached, and a thorough digital examination can be made, and it is claimed that any vesicular growth can be removed.

The entrance through the rectum is not at present warranted, either by success or usage, and unless in the hands of experts, will never be.

The supra-public is the most popular. Its advocates argue that prostatic growths, which cannot be discovered by exploration through the rectum, nor by any other than this route, can be seen, and can be reached by the knife or scissors and be more readily removed; that there is no correspondence between the severity of the symptoms, and the size of the prostate, as felt through the rectum, the difference depending on the place where the prostrate is enlarged. McGill says, "Experience shows that drainage takes place more readily through the soft abdominal, than through the hard perineal tissues."

Hunter McGuire read a paper at the American Surgical Association, September, 1888, "On the Formation of an Artificial

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Urethra and Prostatic Obstruction," in which he advocated leaving a fistulous opening above the pubes, two and a half inches long, and extending upwards and forwards. The history of two patients on whom he had operated, was given, one of whom could retain water two or three hours, and could expel, or retain, his urine at pleasure. The other retained his urine for six hours at one time, and never had any desire to empty his bladder.

While theoretical objections, necessarily, have great weight in untried operations, anatomical, pathological, or other objections, should not prevent the doing of those operations which have the prestige of success. And yet we think with Socin of Bale, that success has resulted, in many instances, from washing out the bladder, and leaving the sound in position, rather than from the particular operation performed.

(3). *What Conditions should determine the Choice between the Supra-pubic and Perineal Method of approaching the Prostate Gland Operating for Obstruction in Senile Prostate?*—Albert E. Hoadley, M. D., Chicago.

I shall confine myself to the consideration of only a few conditions which should influence the choice of method. The introduction of the perineal method, or median urethrotomy, was a boon to surgery. It made it possible to explore the vesical surface of the prostate, and, in some cases, the whole interior of the bladder. It was also possible to operate, to a limited extent, upon the prostate, and to remove small pedunculated growths, calculi of small size, etc., and the operation thus performed clearly demonstrated that the enlarged prostate was amenable to operative treatment, that it bore the operation well and good results were obtained. It also demonstrated that only operations limited to the median line and limited in extent, could be performed, owing to the great depth and narowness of the wound, rendering it practically impossible to use an instrument while the finger, as a guide, was in the wound. This fact deterred many surgeons from operating, even after the wound was made for the purpose of exploration, it being regarded as extra hazardous to use instruments in that situation without being able to guide their actions by the sense of touch with the finger of the other hand. As a matter of course, the operations were performed only by men possessed of superior skill, and even they

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longed for a better method of exposing the prostate for operation, that they might the more thoroughly and with more certainty perform the work that had been demonstrated to be a great advance in surgery. It was not long before their hearts' desire was fully realized in the introduction of the supra-pubic method, with the demonstration of its practicability and safety, which we owe first to Garcon for the suggestion and the demonstration upon the cadaver that it was practical; then to Petersen, who reported the first supra-pubic cystotomy in 1880, since which the technique of the operation has been developed to what would seem almost perfection, many surgeons having contributed, among them our own Belfield.

By means of the supra-pubic method, the vesical surface of the prostate can be explored by sight or touch, and the operation prosecuted with ease and certainty, to the extent of removing large portions of the prostate and any part, or all, of the bladder that is not intimately invested by peritoneum. Supra-pubic cystotomy as an operation is now ten years old and it has been amply demonstrated that it is a safe operation; that as a complication to prostatectomy or other operations within the bladder, it is insignificant. Its technique is simple. It requires no superior skill to insure safety. It is an operation for the average surgeon, and may be resorted to for the purpose of diagnosis alone. Therefore, any condition of the prostate that demands an operation other than mere dilatation, should be the condition determining the choice in favor of the supra-pubic method, and in all severe operations upon the prostate or bladder, the two methods should be combined, the perineal opening for drainage, even if it could serve no other purpose.

(4). *Results of Operations for the Removal of Senile Prostatic Obstructions.*—ALBERT B. STRONG, M. D., CHICAGO.

Petersen's technique[1] for elevating the bladder and the modern advance in our art, have opened up a new field of usefulness for the surgeon in bladder diseases.

In determining what are the results of operations for the removal of senile prostatic obstructions, an appeal must be made to

(1). For the modern technique, see an article on the relation of the peritoneum to the abdomnial wall and bladder, with especial reference to supra-pubic cystotomy, as shown by frozen sections of the male pelvis, by Albert B. Strong, M. D., Chicago. Vol. 3, Transactions Ninth International Medical Congress. Also Annals of Surgery, January, 1888.

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recorded cases. When you consider that the operation is comparatively a new one, never having been done, so far as is now known, prior to October, 1886, when Dr. Belfield, of this city, successfully performed supra-pubic prostatectomy, the patient making a good recovery, you can readily understand that the material to draw upon must of necessity be rather limited. All forms of operations with instruments passed through the meatus, such as cutting, burning, or crushing, or treatment by electrolysis, are only mentioned to be condemned. They are all faulty and unscientific, blind working in the dark, and above all, the results are not to be compared with the open operations above the pubes, or through the perineum.

In searching the journals for cases, many have been noted, but, unfortunately, the reports have been so meager and vague that for our purpose many of them were practically valueless.

I have succeeded, however, in arranging forty-one cases in a tabular form, which may possibly be of service to you in the future. For the present, some interesting points may be noted, and the results given in as brief a manner as possible. We have purposely left out all cases where stone in the bladder coincided with enlarged prostate. In no instance was the operation made until all other methods of treatment had failed. Most of the cases were broken-down old men, worn out with pain, frequent micturition, or self catheterization, not a few had acute retention of urine and were in a typhoid condition, and apparently had but a short time to live, yet some of them recovered. Each had suffered from bladder troubles for periods varying from three to twenty years. Their ages varied from fifty-three to eighty-seven years. The amount of of prostate growth removed varied in size from a pea to a mass weighing four ounces.

A dangerous amount of hemorrhage from the prostate wound does not seem to have been of frequent occurrence, for it is mentioned in only four cases. In one it continued intermittently for twenty days; the patient ultimately made a good recovery. In another the bleeding lasted four days; patient recovered. In the remaining two cases, it seems to have been a powerful factor, if not the direct cause of death, for ineach the hemorrhage continued until the patient died, next day. Thirty of the cases were operated upon above the pubes. The prostate growth, or portions of it, were re-

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moved by twisting once, ecraseure once, burning twice, scissors three times, by snipping the mucous membrane and enucleating with fingers and forceps, fifteen times; not mentioned in the remaining cases. Eleven of the cases were operated on through the perineum. The prostatic growth was tunneled once, twisted off with forceps twice, burnt down with galvano cautery once, incised six times; cut away once, no relief following, the bladder was opened above the pubes and the middle lobe removed, the process not stated, and finally urethrotomy was made in one case, operation not completed, owing to faulty implements. Ten out of thirty supra-pubic cases died shortly after the operation, but in only three of these can this be assigned as a cause, namely, two from hemrrhage, and one from acute irritative urinary fever. The remaining causes of death being pneumonia in three cases, granular kidney one, insane one, chronic pyo-nephritis one, and one died next day from causes not mentioned.

Four out of the eleven perineal cases died shortly after. No death seems to be directly due to the operation, for the causes given are apoplexy, uremia, chronic pyo-nephrosis, and exhaustion.

A comparison of these two classes of cases shows very conclusively that it is much easier to remove the offending portion by the supra-pubic, rather than the perineal method, for in each of the former cases either the whole or a portion of the enlarged prostate was actually removed, while in the latter a portion of the gland was actually removed in only four cases, and simply split down in six.

Of those cases that recovered, the final results are very gratifying and speak volumes for the future of this operation, in those desperate and otherwise hopeless cases.

In order to bring out this fact more clearly, I can not do better in closing this brief paper than by making a few quotations from the histories.

In one case, two years and six months after the operation, patient is a hale and hearty man; has no difficulty with his urine unless he drinks to excess.

In another case, two years and three months later, patient is in good health and has not required a catheter since the operation.

At the end of two years, in another case, patient writes: "I am glad to inform you that I have never felt anything of my old

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complaint since I left Leeds, and have enjoyed good health, and to all appearances, they have cured me."

In another case, one year and ten months later, patient has never used a catheter since the operation. He can empty his bladder perfectly, has no pain, and can sleep all night.

In another, one year after, he has not required a catheter, but still suffers slightly from vesical catarrh.

At the end of one year, in another, the urinary symptoms are entirely relieved.

Another has continued quite well, ten months after the operation.

Another, at the end of three years, feels perfectly well, though still dependent on his catheter. The operation was a life-saving one in his case.

At the end of fourteen months, another is able to retain and pass his water.

Another was under observation for two years, during which time he was free from urinary symptoms and in good health.

The post mortem appearances in one case that died of pneumonia six weeks after the operation, deserves special mention. "The site of the operation (in the bladder) presented a perfectly normal appearance. There was nothing to suggest that any breach of surface had been made, no unhealed surface, no cicatricial contraction."

And finally we have the authority of Reginald Harrison that the removal of the hypertrophied prostate "renders a return of it improbable."

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Supra-Pubic Prostatectomies.

NO	SURGEON.	AGE.	URINARY SYPTOMS.	PRESENT CONDITION.	DATE AND NATURE OF OPERATION.	SUBSEQUENT HISTORY.	FINAL RESULTS.
1	McGill.	65	2 years.	Bad.	April 25, '87. Middle lobe size of bean removed.	Wound healed, natural micturition on the 27th day.	At end of 2 yrs., 6 mos. is a hale and hearty man. Has no difficulty with urine unless he drinks to excess.
2	McGill.	61	6 years.	Uraemic. ⅓ bulk of urine is pus.	July 29, '87. Collar enlargement size of walnut removed in fragments.	In 40 days wound closed and natural micturition.	At end of two yrs., 3 mos. in good health and has not required catheter since operation.
3	Atkinson.	66	5 years.	Bladder distended above umbilicus.	Oct. 28, '87. Growth size of cricket ball enucleated.	In 2½ mos. left hospital, passing urine naturally.	At end of 2nd yr. patient writes he has felt nothing of the old complaint since he left hospital and apparently is perfectly well.
4	Atkinson.	71	1 year.	Bladder distended to umbilicus.	Dec. 15, '87. Cut and enucelated growth weighing ½oz.	In one month wound entirely healed up and passing urine naturally.	15 days later died from pneumonia. Post mortem notes state site of operation (bladder) in perfect condition. Healed without cicatricial contraction.
5	McGill.	62	Auto catheterism. 7 years.	Copious purulent deposite.	Dec. 19, '87. Collar enlargement size of walnut removed.	In 3 weeks wound healed and natural micturition.	At end of 1 yr. 10 mos. perfectly well. Never used an catheter since operation. Passes urine 3 or 4 times daily.
6	McGill.	67	Auto catheterism. 3½ years.	Fairly good. Uses catheter 20 times in 24 hours.	Jan. 16, '88. Middle lobe size of bullet removed. Bladder much thickened and non-distensible.	Wound suppurated, no healing.	Died in 3 weeks, from granular kidneys.
7	McGill.	73	Complete retention 5 yrs. ago. Frequent attacks since, in spite of auto catheterization,	Very feeble.	Feb. 14, '88. Both lateral lobes removed, weighing altogether 2 oz. 30 gr.	On the 17th day all the wound was healed and the urine passed naturally. In 3 days more he went home.	Died in 11 mos. Had symptoms of cystitis for 4 mos. before death. Became insane and tried to suicide.
8	McGill.	69	30 years.	Good. Is passing urine 20 times in 24 hours.	May 14, '88. Prostate generally enlarged and very hard. Small piece size of pea removed.	In 6 weeks discharged with wound almost healed, pass urine 3 times every night.	Not traced.
9	McGill.	72	2 years.	Bad. Urinates 30 or 40 times during day, and 10 or 12 times at night.	June 11, '88. Prostate very hard. Projecting middle lobe of small size. A piece size of small pea removed.	In 1 mo. wound closed but symptoms not relieved. Wound was re-opened and permanent fistula made. Left relieved in 4 mos. after first operation.	At end of 1 yr. 2 mos. was confined in bed with supra-pubic urinal.

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NO	SURGEON.	AGE.	URINARY SYMPTOMS.	PRESENT CONDITION	DATE AND NATURE OF OPERATION.	SUBSEQUENT RESULTS.	FINAL RESULTS.
10	Mayt Robson.	62	8 yrs. ago injury to perineum, since has frequent urination. 3 yrs. ago had to pass water 20 times in night. Catheter broken in bladder. Removed by median perineal incision. Temporary relief. Recurrence of symptoms.	Complete retention and greatly distended bladder.	Sept. 6, '88. Middle lobe size of a walnut. Lateral lobes also enlarged. Removed portions weighing over ½ oz. Considerable hemorrhage.	Intermittant hemorrhage continued 20 days. In 3 weeks more wound healed. Some cystitis continued.	At end of one year report is that he did not require a catherer but he still suffered slightly from vesical catarrh.
11	McGill.	64	14 years. For last 2 yrs. micturated 7 or 8 times during night.	Retention and several false passages. Very bad tongue, high temperature and bronchitis and emphysema.	Oct. 22, '88. 3 portions of prostate removed, each size of bean, from lateral and middle lobes. Hemorrhage considerable.	Died next day.	At postmortem, kidney normal, bladder much hypertrophied.
12	McGill.	62	1 yrs. auto-catheterism. 15 months extreme irritability.	Hale, healthy man. 9 oz. residual urine sp gr. 1020.	Nov. 13, '88. Middle lobe size of filbert removed with scissors.	Bleeding from bladder for 4 days. Clots removed by irrigation. Wound healed and restored micturition in 40 days.	At end of 1 year the urinary symptoms are entirely relieved.
13	Teal.	54	4 years. Passed blood three months ago. Complete retention 4 days ago which has persisted.	Fairly good. Requires catheterism. Blood in urine.	Nov. 22, '88. Two pieces of prostate size of filbert removed from lateral lobes by scissors and forceps. Considerable bleeding.	Hemorrhage continued till death. 10 hours afterward.	....
14	Jessop.	68	6 years. Can not hold urine more than 1½ hours.	Complete retention.	Dec. 26, '88. Middle lobe removed by forceps. Lateral lobes were enucleated with fingers.	In 1 mo. wound healed and natural micturition.	....
15	Atkinson.	68	Lately micturated 20 or 30 times during day and often during night.	Catheter passes with difficulty and causes much pain.	Jan 10, '89. Enlarged prostate removed by scissors.	On 20th day was discharged passing urine naturally.	At end of 10 mos. report is that patient is relieved since operation, passing urine 8 or 9 times in 24 hours. Small sinus leading down to bladder.

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16	McGill.	75	5 years.	Very feeble. Catheter passes with difficulty. Trace of albumen in urine.	Jan. 26, '88. Two enlarged lateral lobes removed by enucleation, each the size of a small walnut.	Got up for two hours on 4th day. Progressing favorably.	....
17	Atkinson.	55	Lithotomy in Oct. '88. Cystitis supervened. Bladder opened through perineum. 6 mos. later suprapubic lithotomy and a small portion of prostate removed at same time.	Micturates 15 times nightly. Urine loaded with pus.	July 11, '89. Bladder opened and a collar enlargement of prostate removed entire.	Is progressing favorably.	....
18	Kummell.	73	For years. Later has putrid catarrh of bladder, and bloody urine.	Very poor. Fever. Bronchitis.	'86. Removed pea-sized concentric lobe.	Wound healed and patient up in 16 days.	At end of 3 yrs. feels perfectly well, though still dependent on catheter. The operation was a life-saving one in this case.
19	Kummell.	73	4 years, during which he had frequent retention of urine.	.....	Pea-sized portion removed with the pasquelius cautory	After two weeks wound completely healed. Could hold urine several hours.	Died 3 mos. afterward from pneumonia.
20	Kummell.	68	Long suffered from bladder trouble.	Decrepit.	Burned off middle lobe, size and form of last phalanx of a large thumb	Bladder wound healed in 14 days.	At end of 14 mos. report is that patient can retain and pass his urine.
21	Kummell	71	Had used the catheter for a year.	Much run down. Passes urine 8 or 10 times during night.	Left lateral lobe removed.	Could retain his urine at night 2½ hours.	.. . .
22	Kummell.	69	....	Retention and seriously affected general condition.	Consecutive walnut-sized hypertrophy completely removed.	....	Died on the 10th day from bronchopneumonia.
23	Browne.	87	5 years. Intense vesical irritation. Self-catheterization every 3 or 4 hours. Later, every hour.	....	March 7, '89. Supra-pubic prostatectomy. Right lobe enormously enlarged. Opened prostatic capsule and shelled out lobes which were removed by torsion, no cutting or tearing being employed. Pieces weighed nearly 4 oz.	On 16th day patient sat up Wears a supra-pubic tube; walks about and is very comfortable.	....
24	Dittel.	65	Catheterization 1 yr. Cystitis. Fetid urine.	.....	Supra-pubic puncture, urinary infiltration, supra-pubic prostatectomy. Median lobe removed with scissors.	Death in 6 days from chronic pyelo-nephritis. Granular kidneys.	....

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NO.	SURGEON.	AGE.	URINARY SYMPTOMS.	PRESENT CONDITION.	DATE AND NATURE OF OPERATION.	SUBSEQUENT HISTORY.	FINAL RESULTS.
25	Watson.	80	10 years. Catheterization 4 mos.	.....	Supra-pubic prostatectomy. Large median enlargement partially removed.	Died on 4th day, from acute irritation of urinary tract.	....
26	Watson.	69	Urinary symptoms 10 yrs. Catheterization 5 yrs. Occasional hemorrhage 3 yrs. In last year once in 2 mos.	.....	Dec., '88. Both lateral lobes enlarged to size of a Spanish chestnut, connected by a ridge. Ridge perforated and old. Surrounding the opening in it were bleeding granulations. Lateral lobes removed by wire; granulations by scissors and curette.	Wound healed, and patient up and around on 18th day. Went home at end of 6 weeks.	In a recent letter the gentleman states he has not had such good health for years. Has to use catheter 5 times in 24 hours. He has absolutely no bladder symptoms and is in perfect health.
27	Belfield.	75	Several years. Difficulty in urination. Catheterization 1 yr.	.....	Enlarged middle lobe, as large as a hazel nut, twist-off with forceps, Oct. 7, '86.	Recovery Wound closed in 17 days.	Seen at intervals; last time in June, '89. Urinating without catheter. No appreciable residual urine. No urinary difficulty.
28	Belfield.	64	Urinary difficulty for 7 years. Catheter 2 years.	Pronounced cystitis. Urination every hour or thereabouts.	Feb. 26, '87. Supra-pubic cystotomy. Incision of mucous membrane and enucleation of tumor the size of hazel nut.	Uneventful recovery.	Seen at intervals for 11 months. Two slight attacks of cystitis, probably from indulgence in alcohol.
29	Belfield.	63	Bladder symptoms for 9 yrs. 3 acute retentions. Catheter used irregularly and with difficulty.	Cystitis.	April 4, '88. Supra-pubic cystotomy. Excision of several growths in shape of horse shoe around the urethral orifice.	Recovery.	Seen at intervals of 8 months. Urination easy with catheter. No cystitis.
30	Belfield.	69	Bladder symptoms for 6 years. Catheter over 2 yrs.	Cystitis.	March, '89. Supra-pubic cystotomy. Excision of lateral tumor and median elevation.	Recovery.	Seen 6 months later. No return of symptoms.

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Perineal Prostatectomies.

NO.	SURGEON.	AGE.	SYMPTOMS.	PRESENT CONDITION.	NATURE OF OPERATION.	SUBSEQUENT RESULTS.	FINAL RESULTS.
1	Harrison.	83	Great sufferer from urinary symptoms.	.....	Prostate tunneled from perineum.	Recovery.	Atrophy of the prostate followed the operation. Perineal drainage tube worn for 12 weeks. Patient was under observation for 3 years, in which time there were no urinary symptoms and an entire restoration to health took place.
2	Harrison.	63	Severe urinary symptoms.	....	Lateral lobes of prostate incised.	Recovery.	Under observation for 2 years, during which time he was free from urinary symptoms and in good health. Perineal drainage tube worn for 2 weeks.
3	Keyes.	55	Cystitis for several years catheterization.	.....	Prostatotomy.	....	Relief from cystitis, and alive and well 9 years afterward. Catheter, however, continued in use.
4	Keyes.	80	Stricture. Cystitis.	....	Prostatotomy.	....	Relieved of cystitis. Subsequently died of apoplexy.
5	Cabot.	62	Cystitis for 5 years.	....	Prostatotomy. Drainage tube used for two weeks.	Recovery.	Partial incontinence of urine for some months. Control subsequently re-established. Under observation for 18 months. No return of urinary symptoms, but residual urine persisted.
6	Belfield.	59	15 years chronic cystitis. Catheterization one year.	Chills, fever and sweats.	Perineal urethrotomy and drainage two weeks; then prostatotomy with galvano cautery through perineal wound made channel size of lead pencil through prostate.	Recovery. No constitutional disturbance followed the operation, but entire relief to urinary symptoms. Residual urine reduced from 8 oz. to 1 oz.	Died sixth month. Uræmia. Post mortem showed small, contracted kidney.
7	Belfield.	68	7 years cystitis.	Very exhausted condition.	Perineal urethrotomy not completed owing to faulty instruments.	Died in 2 months. Urinary symptoms mitigated during life. Death from general exhaustion.	....

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Perineal Prostatectomies.

NO.	SURGEON.	AGE.	SYMPTOMS.	PRESENT CONDITION.	NATURE OF OPERATION.	SUBSEQUENT RESULTS.	FINAL RESULTS.
8	Watson.	74	Bladder 5 years. Catheterization 1 year for last 6 months every half hour day and night. Hemorrhage, cystitis, fetid, purulent urine.	.....	Perineal prostatotomy. Small median enlargement. Drainage tube 8 weeks.	.....	Under observation 6 months. Great improvement in general health. No return of symptoms. No hematuria. Catheterization necessary once in two hours.
9	Keyes.	..	Catheterization 4 yrs.	.....	Perineal.	Recovery.	Restoration of normal urination and relief of all urinary symptoms.
10	Harrison.	80	Frequent and painful urination. Hematuria.	.....	Perineal tumor of median portion removed with forceps.	Recovery.	Cessation of hematuria and great relief to urinary symptoms.
11	Coulson.	..	Catheterization for 2 years.	.....	Tumor of median portion by forceps.	.....	Death on tenth day of chronic pyonephrosis.

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III. Renal Calculus.

(1). *Diagnosis.*—I. N. Danforth, M. D., Chicago:

We all understand that a diagnosis of calculus in the kidney is difficult. It is frequently beyond our reach. We can not make a diagnosis with absolute certainty in some cases. It is always best for us to operate with the understanding that the diagnosis is to be completed or verified after an operation is made; that is to say, there are no symptoms which are always positively diagnostic of stone in the kidney. I have had one such case under my care. I made a diagnosis, operated upon the kidney, found a calculus, and lost the patient. My experience is therefore limited to one case. This case was under my care for about two years, and the symptoms upon which I based my diagnosis were briefly these:

1. There was a constant, deeply located pain in the affected kidney. This pain was never absent, except during sleep. I consider that an important point. Sometimes the pain was slight, sometimes it was very severe. It began ten years prior to the time I first examined the patient, and it had never been absent for a single waking moment for ten years. The peculiarity about this case was that the woman had to walk with great care; that is, she had to watch the surface of the ground that she stepped upon, so that the body would receive no jar or shock. She often said to me that any severe shock or sudden step in the dark, or anything unexpected in the movements of the body, gave her an increased amount of pain in the region of the affected kidney.

2. There were frequently outbursts or attacks of nephralgia associated with this constant pain. These were induced by undue exercise, such as dancing, riding, jumping, rapid walking, or anything which communicates to the body unwonted jars or shocks. Such exercises were always likely to induce attacks of renal colic. The patient was therefore told not to dance or jump or unduly exercise herself in any way.

3. There is more or less blood in the urine, sometimes small, and sometimes large in amount. In this case the amount of blood lost was very small; sometimes it was so scanty that it was difficult to detect it. But always, when severe attacks of nephralgia came on—and sometimes they were almost beyond endurance—

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during or long after such attacks, there was some escape of blood with the urine, and this blood almost always came away in the form of minute cylindrical clots, which doubtless came from the capillary extremities of the straight tubes. The loss of blood, though small in amount sometimes, is pretty constant. Between the severe attacks of nephralgia it is slight. If you make a microscopical examination of the deposit you will always find more or less blood globules, some of them shrunken, others round, oval and plump; so that you can generally rely upon the presence of blood in the urine nearly all the time, if there is a calculus in the kidney. If you examine microscopically the sediment in the urine, you will also find mucous corpuscles, and epithelial cells from various parts of the kidney. Very often you will find no tube casts, but a large cast from the lower extremities of the large tubes; sometimes blood clots, which are like those I have described. They are sometimes present for weeks at a time, but during that time there is almost always more pain than when they are not present. Furthermore, there is a lithic acid or oxalate of lime deposit, along with the other factors of diagnostic value. These are constantly present, whether there be an escape of blood or not. Tube casts are not usually present; but there is a mucin cast which is long, sinuous and wavy, which is constantly present, if there is constant irritation of the kidney, just as when there is a calculus present.

4. Calculus of the kidney is almost always accompanied by a marked and constant increase of the solid factors of the urine, especially lithates, lithic acid or its derivatives, showing that the cause of the calculus pre-exists in the blood. So long as the solid factors of the urine are held in solution, a calculus is impossible; in fact, they must be deposited within the renal tubes in order to build up or form a calculus; so that along with the urinary deposits we find grains of lithic acid, lithates, oxalates or phosphates, but most likely lithates, in great excess. If these are present in the urine in great excess for any great length of time, we may reasonably presume that we have a calculus in the kidney, provided other characteristic symptoms are present.

5. There is increased frequency of urination. The urine is not necessarily passed in large quantities, but is voided with greater frequency than under ordinary circumstances. It is accompanied by pain or irritability at the neck of the bladder, thus caus-

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ing a constant desire to urinate. There is more or less smarting of the urethra, showing that the urine itself is irritating, and this irritability is very apt to extend along the whole urinary tract. The symptoms I have mentioned, if present for any considerable length of time, are strongly presumptive of calculus in the kidney. I do not say that they are absolutely diagnostic, but if they are present for any great period of time, and if the history of the case leads up to gout, rheumatism or any other causes of a calculous deposit in the kidney, they go far towards establishing a diagnosis of calculus in the kidney. It is at least fair to say that without these indications, a renal calculus is not likely to be present.

(2). *Operation* (*Nephro-Lithotomy*).—J. FRANK, M. D., Chicago:

A stone may be found in an abscess cavity, into which the kidney has become converted from long suppuration and breaking down of gland substance, due to the irritation of a calculus; yet the opening of such a sac, with the emptying of its contents, properly comes under the head of nephrotomy.

The term nephro-lithotomy, however, applies to the search for stone and its extraction from a kidney whose integrity is entirely, or in great part, preserved, where there is no, or but little, enlargement of the organ, and where the surrounding tissues, with possibly the exception of the capsule, are healthy and their anatomical relations correct.

The operation should be performed only under the strictest antiseptic precautions.

Chloroform should be preferred as the anæsthetic, it having been found to be the least irritating to the kidney.

The patient is postured upon the sound side, a pillow covered with impervious material being placed in the lumbar region of the same side. This is done with a view to increase the space between the last rib and the crest of the ilium, and also to decrease the depth of the wound to be made. The twelfth rib is carefully located, and its length noted, in order that the pleura may not be opened, as is possible when the rib is shorter than usual, it being taken as a guide for the incision. An incision is now made through the skin, commencing from $\frac{1}{2}$ to $\frac{3}{4}$ of an inch below the last rib, $2\frac{1}{2}$ inches from the spine, near the outer border of the erector spinae, whose sheath need not be opened; is carried downwards almost to

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the crest of the ilium. This incision will measure from 4 to 4½ inches, varying according to age and size of the patient. The superficial fascia is now divided, exposing the outer margin of the latissimus dorsi and posterior border of the external oblique. These structures are cut through, together with the underlying internal oblique and transversalis aponeurosis, which brings into view the quadratus lumborum and a deep layer of the lumbar fascia. The quadratus lumborum is sometimes thick and broad and not readily retracted; if this be so, the outer border may be snipped with scissors to the extent of allowing easy retraction. Should the last dorsal nerve and accompanying vessels cross the field they must, if possible, be drawn aside. The lumbar fascia is next opened, uncovering the circum-renal fat.

All of the divided tissues should be made to correspond in extent with the incision of the integument. All bleeding points should be secured, by forceps, as they arise.

The fatty capsule is now teased open with forceps and fingers. It may be observed, that as the back of the kidney is approached the fat is loose, and of a delicate primrose color; if there has been inflammation, the tissue in question is abnormally firm and adherent. The fat is fully divided, and the kidney now exposed on all sides. Broad retractors are employed to separate the parts, to allow of more free manipulation of the organ. Should this not suffice, it is best to convert the incision into a T-shaped one, by cutting towards the rectu muscle, the peritoneum being pushed forward and the colon, if distended, crowded aside with sponges.

There are four methods of exploration, viz.: Palpation, needling, sounding and digital examination of the interior.

By palpation, every part of the organ should be carefully and systematically touched and squeezed; any enlargement, increased hardness, unevenness or prominence noted. The kidney should be punctured at any point where these conditions are present.

The palpation of the posterior surface, which is usually first reached, is facilitated by pressure backwards upon the abdominal wall, or by supporting the gland with the opposite hand, or against a hard, flat body. The anterior surface is examined with the kidney pressed against the quadratus lumborum. By tilting the organ forward, or by drawing it out of its bed, if that be possible, the pelvis can be examined.

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Should palpation not lead to detection of stone, needling must be resorted to. The same system as with palpation should be followed, in order that no part may pass unnoticed. For this purpose there is used a long hare-lip or darning needle, 2½ inches long, of a circumference to correspond to French sound No. I or III; is fixed in a forceps with grooves, allowing of holding the needle at any angle. In employing this instrument, the organ should be steadied by the other hand, the needle being pushed into the kidney at its posterior border, commencing on one end and continuing over the entire length, each thrust of the needle traveling toward the hilum.

Should a stone be struck, a thin-bladed knife or tenotome, with narrow blade and long shank, should be introduced alongside the needle until it also strikes the stone; the perforation is made into a vertical incision, and enlarged sufficiently to extract the stone with forceps or finger.

If this method fails to locate a calculus, the kidney should be carefully opened and sounded. The best place to open is near the pelvis, as the organ is thinnest there and the calyces are more readily reached. Another method is to puncture the gland at its lower end with a long-bladed tenotome—the blade being not more than ⅓ of an inch wide, the shank not shorter than 7 inches—in a direction upward and inward, making for the lowest of the calyces. Into the opening a child's bladder sound, corresponding to No. 9 French, is introduced. A block-tin sound will be found to be very serviceable, as it can be bent to assume any direction. It is advised to pass the sound at once to the top of the kidney cavity, a distance of nearly 4 inches; the exploration should then be carried out systematically from above downwards, the point being rotated in all directions, so as to investigate both tubes and calyces as the sound is withdrawn.

If stone be not found after palpation, needling and sounding, the organ can be opened freely enough along its entire posterior border to admit the finger, with which the interior can be explored.

Assuming that the calculus be discovered in the pelvis or orifice of the ureter: If located in the pelvis it may be removed by opening the pelvis or by cutting through the renal tissue near the pelvis. The method appearing to be most feasible would be to incise the renal tissue nearest the pelvis, and if the calculus could

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not be reached through the opening the pelvis may be opened by continuing the incision. It is most difficult to extract, when the stone is imbedded in the lowest part of the pelvis, or in the orifice of the ureter. To remove it, the last-named incision can be adopted. It will often tax the ingenuity of the operator to remove a calculus from the orifice of the ureter. The hemorrhage from the cut surface of the kidney is controlled when the finger is introduced for examination.

The short time allowed for this paper will not permit of a description of the rare forms of calculi and the methods of extraction.

If the renal tissue has not been too much disturbed it can be sewed with continuous or interrupted catgut sutures. A drainage tube is placed in the most dependent part of the wound and packed with gauze. The gaping portions of integument are brought together around the tube.

Sterilized gauze, smeared with or soaked in any antiseptic substance, is placed over the wound and surrounding integument. The drain tube is carried through the immediate dressing. Over this is placed a piece of rubber tissue, makintosh or silk protective, and over all a well-padded dressing.

The drain tube can be connected with a bottle partly filled with sublimate solution. If this be done, the dressing need be changed less often, the fluid draining into the bottle.

Temperature and pulse will indicate how often the dressings must be changed.

IV. Treatment of Wounds.

(1). *What is the relative value of the different suture materials?*—D. A. K. Steele, M. D., Chicago.

In selecting a suture material, we are guided by the light of modern surgical pathology to select a material that is surgically clean. A substance that by suitable preparation and preservation has been rendered aseptic, i. e., incapable of containing within itself micro-organisms that would carry infection from *without* into the tissues of the body. By a rigid adherence to this rule we are enabled to emulate Marcy, and close an aseptic wound by an aseptic suture aseptically applied.

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Among the various materials used, we mention in their order of merit silver wire; silk-worm gut; silk—iron dyed, white; hemp; catgut—juniper, chrome, carbolized, sublimated; kangaroo tendon; moose fascia lata; other animal tendons, horse hair, etc. Silver wire well polished and placed in a five per cent solution of carbolic acid just before using, still continues to maintain its position as the best material for bone sutures, although its supremacy is disputed by the frequent use of aseptic bone pegs and steel nails in compound fractures and joint resections. It is also still used in closing lacerations of the cervix uteri, perineum, and laparotomy wounds, and a very fine wire by some surgeons for face wounds. In osseal surgery it becomes readily encysted, although sometimes it provokes a circumscribed osteo-myelitis and lamellar necrosis, requiring its removal, and a curetting of the granulation-lined cavity in which it lies imbedded. Silk-worm gut is an improvement upon silver wire in the suturing of operative wounds, especially those of the os uteri, perineum and abdominal walls, as it does not become discolored, is indestructible and unirritating. It should remain in an anti-septic solution two or three hours before use, in order to become soft enough to tie easily. In oral surgery I also esteem it highly as a suture material. It is much easier to thread than silk.

Silk rendered aseptic by boiling for an hour in a five per cent solution of carbolic acid, then wound on glass bobbins and kept in absolute alcohol is the best material for general surgical work, as a wound approximator. The safest way to keep it is to only wind enough on a bobbin for a single-needle thread, and keep each ligature in a single bottle. Where many yards are kept on a single spool, and drawn off by the side of or through a cork from time to time, there is much danger of infection, and I have had a number of "stitch abscesses" follow the use of the ordinary commercial aseptic silk. For ligating tumors, pedicles, arteries, closure of deep wounds, etc., silk is to be preferred, the iron-dyed theoretically being the best. As a buried suture for closing periosteum over the ends of bone, approximations of divided muscles, nerves or tendons. I think fine aseptic silk is nearly, if not quite equal, to catgut, but wherever a suture or ligature is placed in movable connective tissue, where there is much gliding of the parts, I think silk is not likely to become encysted or absorbed, but after some weeks or months the little knot becomes displaced, and acts as a foreign

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body, and induces irritation and sometimes an abscess, possibly from germs contained in the inner layer of its meshes that were not rendered innocuous by the boiling.

Catgut is open in a greater degree to this objection, and requires greater care in its preparation. Lister's or Kocher's methods are considered the best for freeing the gut from oil and septic animal matter. Reverdin advised exposing the gut for four days to a constantly increasing temperature, maximum 140°, and then placed in oil of juniper for a day, and afterwards kept in alcohol. This he had used clinically for eighteen months, with perfect results. Small catgut is found to be always aseptic, and can be safely used for suturing intestine, peritoneum, periosteum, nerve, facia, tendon or muscle, and is of decided advantage over silk as a ligature, as its place in the tissues is taken by a living band of connective tissue cells, which rapidly invade its softening structure. The animal aseptic suture is therefore the ideal suture material, but too often we find the large sizes of catgut, even when carefully prepared, contain within their twisted and obliquely arranged fibers in the center of the gut, unsterilized ores that, in the process of softening and substitution, expose the wound to the danger of infection. Animal tendons, such as the kangaroo tail, whale tendon, fascia lata of the moose, or any similar tendon, in which the fibrils run longitudinally, are capable of being readily separated, and of sufficient length for ordinary surgical use, would seem to be better than catgut, which up to this time has dominated the field of the animal suture.

(2). *What is the best method of preserving the different suture materials until required for use?*—Dr. E. W. Andrews, M. D., Chicago.

This is one of those technical, practical subjects which have very much to do with our success in operative surgery. We will appreciate this when we remember that anti-septic procedures in any given case are necessarily a chain, and that the breaking of a single link means failure of the whole. The suture enters the innermost recesses of a wound, and remains there. It carries more possibilities of infection than implements, fingers or dressings, because it is left in an ideal medium for the generation of any germinal matter which may be about it, whereas the former are only brought momentarily in contact with the tissues, or lie

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externally after the wound is closed. When our suture and ligature material may play us false, it is idle to hope for success, however faithful we may have been with our sterilizing of hands, instruments, site of operation, air and outer-dressings. Assuming that absolutely sterilized suture material is essential, and that we are all agreed as to the necessity of preparing and keeping it aseptic for all operations, it becomes simply a question of methods designed to meet the same end. Among methods that is to be preferred which has least tendency to destroy the substance of the suture, or weaken its strength, and which is surest and most permanent in its anti-septic power.

Dry heat has been used more and more in the past two years as a means of sterilizing dressing and instruments, laboratory experiments having shown that this is one of the best means known of destroying the vitality of microbes. Accordingly we find some surgeons now advocating the sterilizing of sutures, also by heat, as being safer, surer and less destructive to the material than the method of keeping them in bottles of various anti-septics, once universal.

Two objections have been urged against the common method: First, that the solution disentegrates and weakens the suture material, and second, that they cannot be relied upon to render them anti-septic.

I will venture the assertion that in the next decade we will come more and more to the use of the dried preserved suture, as distinguished from the wet, or those kept in some liquid. A suture which has been preserved in liquid, as silk in sublimate solutions, or catgut in oils of various sorts, has always become weaker. It has undergone some structural alterations. Silk which has been long kept in watery solution, as we take it out and use it, we find breaks or ruptures easily. Catgut, preserved in oil, may or may not be aseptic. We have been accustomed to rely on various essential oils as preservatives of sutures. I wish to speak here of the experiments of Professor Brunner, who has been, during the last year, testing the aseptic properties of oil of juniper, testing particularly the results of preservation of ligatures and sutures in various fluids. He has experimented in the labroatory in Heidelburg. Experiments were made with a view to determining whether the oil of juniper was really a powerful anti-septic. Professor

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Brunner found that catgut taken from the oil of juniper solutions and implanted in cultured tubes, produced colonies of bacteria. He has shown that the oil of juniper is not an anti-septic sufficiently powerful to sterilize catgut.

Going further into the experiments of suture material, Professor Brunner has found that silk or catgut, at a temperature of 140 centigrade, was sufficient to sterilize absolutely any small quantity of material.

As to solutions, he has discovered that sutures should be immersed for six hours in a sublimate solution of 1-1000 to be safe. Speaking from my own impressions, I will summarize by saying, it seems to me that dry heat will be used more and more in the future for the sterilization and preservation of ligatures and sutures, and experience and experimentation show that if we do resort to solutions, sublimate solutions are the only ones to be depended upon.

(3). *The best means of keeping operative wounds aseptic.*—L. L. McArthur, M. D., Chicago.

Prefacing with the statement that at this time and place, and this audience, the discussion of the question of the influence of micro-organisms is wholly superfluous; I will, in the five minutes allotted, detail as the result of the innumerable experiments, made with this object in view the world over, the best of the many methods of maintaining the operative wound aseptic. As patient, operator, instrument, sutures and dressings may, any one of them, be source of infection, it becomes necessary to devote our attention to each. Patient: 1. The field of operation should be prepared (when feasible, the night preceding the operation) as follows: 2. The part is to be scrubbed with a clean nail brush dipped in spirits of green soap (Spts. Saponis Virid.) till integument is thoroughly wetted therewith, which is then converted into a lather with 5 per cent carbolic acid. 3. When this has been thoroughly washed with boiled water, the field is then to be washed with pure alcohol, which removes all remaining soap that proves so detrimental to the action of the bichloride solution to be next used, and with which the part is to be covered, if the operation is to be performed at once, or with a wet carbolized gauze if over night.

The Operator: 1. Can best cleanse his hands by first smear-

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ing them, while still dry, with a good sweet-oil, rubbing it well into the pores of the skin. 2. This is then to be removed by pouring on the hands a liberal quantity of spts. green soap, which will mix with the oil, and with the oil, will also remove the most obstinate of dirt. It will be a revelation to one who has not tried it, what a dirt persuader this is. Finally the hands are to be rinsed in alcohol, and dipped for a minute in a 1-1000 bichloride solution. This washing should extend to the elbows. The operator should wear a clean gown or linen duster during the operation.

The instruments: With instruments of modern construction it is universally admitted that the safest, best and cheapest means of sterilizing, is boiling in a covered vessel for fifteen minutes. The question is somewhat different when we have to deal with those possessing wooden, bone, and ivory handles, as these are injured by such treatment. Hence, recourse has been had to the fact that a boiling solution is fatal to all microbes in one minute of 1000 solution of washing soda, while it does not in that time injure bone, horn, ivory or wood.

Rubber and gutta-percha must be sterilized by immersion in 1-1000 bichloride solution. Silk should be kept in a solution of 1-500 bichloride, and the regular strand catgut can be rendered aseptic by being kept in 1-1000 solution of bichloride in ether, which has the property of penetrating into the usually oily tissues of catgut, and rendering them safe. The latter just before using is taken out of the ethereal solution and placed with the silk in watery solution 1-1000.

I will venture the statement that one-half the primary wounds under the present method are dressed aseptically at the time of operation, and then only become infected at the redressing. This is a pity, but I believe true, and simply due to the fact that when alone, lacking the stimulus of observers and the excitement of *furor operativus*, we are too inclined to drop into careless habits, and proceed somewhat after this fashion: Call for a questionable basin, and dropping into it an indefinite amount of carbolic acid, proceed to remove the dressing without any such formalities as we were satisfied were essential at first. Here is where the fallacy lies to-day. Too great carelessness at the redressing, permits infection and encourages the sceptical in the belief that there is nothing in the principles of aseptic surgery. As much care should be employed

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to keep the parts aseptic then as at the initial bandaging. Before the old dressing is removed, a stream of 1-1000 should be ready and playing on the inner layer of gauze as it is being removed and during the time of exposure of the wound. Having rendered the parts clean, they can be best kept so by providing, in addition to the regular dressing, a heavy dressing of absorbent cotton, not with the idea of catching discharge, but with the object of filtering the atmosphere, which is to gain access to the wound through the dressings. Lister, to whom we owe so much, has recently increased our obligations by submitting the results of a long series of direct experiments with the new medication for dressings, namely, double cyanide of mercury and zinc. By this agent the discharges are slowly and surely rendered innocent as they seep through the gauze, for the reason that, unlike bichloride, it is not dissolved wholly out by the first portion, thus leaving nothing for the remainder later. This salt, possessing a low range of solubility, while a very high degree of inhibitive action, fulfills the purpose admirably.

V. Perityphlitis.

(1). *Symptoms and Diagnosis.*—E. W. Lee, M. D., Chicago.

I will first mention the leading symptoms in an ordinary case. The patient is *suddenly* seized with pain in the right ileo cæcal region, usually accompanied by nausea or vomiting. Frequently the disease is ushered in by a chill, followed by a rise in temperature, sometimes reaching as high as 104° Fahr. The vomiting usually subsides after a day or two. The pulse ranges from 100 to 120; both pulse and temperature may fall to normal, notwithstanding the presence of pus; this may be accounted for by the fact that a plastic exudate is formed around the pus cavity, forming a solid barrier, which prevents systemic infection. Should the tension, however, be too great, this exudate will yield without actually rupturing, thus affording a fresh field for infection; the temperature and pulse rising until such times as reformation takes place, effectually protecting the surrounding tissues from infection. On examination, tenderness and pain on palpation are found over the region of the ileo cæcal valve. A careful investigation will usually reveal an induration above Poupart's ligament, extending from the anterior superior spine of the ileum to the outer border of the

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rectus muscle, which may be sausage-shaped or flat. Dullness on percussion is usually present, but this symptom is not to be relied on, as gas may be generated in the abscess cavity, rendering the percussion sound tympanitic. The abdominal muscles are always in a state of tension, the tenderness having extended over the whole of that region after a couple of days, frequently causing the case to be mistaken for one of "Peritonitis." Frequently the pain extends down along the course of the anterior crural nerve, the patient flexing the thigh of the affected side on the abdomen. Diarrhoea sometimes precedes an attack of this nature.

I think these are about the leading symptoms in most cases occurring at one time or another for the first four or five days. In making our diagnosis, we have to consider what other lesions this one is liable to be mistaken for. *Carcinoma:* This should be readily differentiated, from the characteristic slow manner of growth. *General Peritonitis:* A careful examination is often necessary, owing to the previously-mentioned fact that tenderness may extend over the whole abdominal region, and that the dullness in the ileo cæcal region may be masked by gas in the abscess cavity. The character of the pulse has a significance in this connection, it being more rapid and smaller in peritonitis, while in perityphlitis, frequently it is slow and of good volume. Diffuse tympanitis occurs in peritonitis, whereas in perityphlitis the tympanitic region, when present, is circumscribed. *Abscess of the broad ligament pointing in the right ileo cæcal region:* This is the most difficult of all lesions to differentiate, as examination per rectum, as well as externally, may give precisely the same physical signs. The best guide is a careful study of the history of the case, with a view of obtaining correct information as to the *mode of infection.* In both lesions we have an infection to begin with, and as the histories of such cases are widely different, we should be able to arrive at a correct conclusion by careful observation. *Intestinal Obstruction:* A most important point in this connection comes up for consideration. Statistics show that 74 per cent of all intestinal obstructions occur at the site of the ileo cæcal valve. It is the favorite seat for invagination, and the symptoms of this lesion at the outset much resemble those of perityphlitis. Both occur suddenly; both may be ushered in by chills, fever and vomiting. The seat of pain is also identical. A tumor or swelling in the right ileo cæcal region is also a frequent

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occurrence in both cases, but after twenty-fours, or even less, there occurs a wide deviation in the course of each. In invagination, bloody stools are present in 80 per cent of the cases; the vomiting is persistent; the pulse gets quicker and weaker; the countenance assumes the characteristic, anxious, pinched expression which is present in intestinal obstruction, while in perityphlitis an amelioration of all grave symptoms usually occurs after the first day or two, owing to the protection afforded by the formation of a protective plastic exudate, as mentioned before.

I can not conclude my remarks without putting myself on record as emphatically opposing the use of the hypodermic exploring needle as an aid to diagnosis in this disease. You can not with safety introduce that needle where it would not be safe to use the scalpel. It can readily be seen how a puncture through a tense sack would, from the inward pressure, be soon made large enough to permit the escape of pus into the peritoneal cavity, and thus cause a surely fatal septic peritonitis. There is no reason why, after having made a diagnosis, the knife should not be used to verify it, and no harm need be done if it should prove incorrect.

(2.) *When to Operate.*—Dr. J. B. Murphy, Chicago:

Dana operated on seven cases in which there was neither fluctuation nor phlegmon in the abdominal wall, and in only one case did he fail to find pus. He was satisfied there was almost entire absence of induration in this case, and could not be certain that pus was not present before making an operation. He operated from the ninth to the twenty-first day from the onset of the attack. In one case he failed to come directly on the abscess, but pus emptied itself through the wound on the second day afterward. Usually, at the end of the fourth day symptoms of general peritonitis subside, and there can be felt a slight induration in the right iliac region; then is the time to operate.

Willard Parker has suggested the operation from the fifth to the twenty-first day, but only in the presence of phlegmon and induration. Eichhorst also says that operations should not be performed except where fluctuation is present.

It is difficult to give the exact indications for the proper time to operate when the symptoms are slight, for both the patient and the surgeon are reluctant to resort to operative interference. To the

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future we will leave the answer to this question. As yet, the number of cases operated on has been too small to lay down any definite rule, notwithstanding, it is my conviction that before many years, every case of perityphlitis, when diagnosed, will be immediately opened, the appendix ligated, if possible, and amputated. This operation gives the only guarantee that a patient can have safety from the impending danger of the disease, and security against its return. It must be remembered that in making the examination, the greatest caution should be exercised in palpation and percussion, as I know from my experience in making autopsies that slight pressure can rupture the adhesions and allow the whole contents of the pus cavity to escape into the peritoneum.

GENERAL DISCUSSION ON SURGERY.

DR. H. A. JOHNSON, CHICAGO:

I have not recently had occasion to look over the statistics or literature of perityphlitis, except casually as they came under my observation.

As far as the diagnosis is concerned, I do not think there is anything to be added to the clear statements of Dr. Lee, nor am I prepared to discuss the question of operation. I might perhaps say that a delay sometimes, after a diagnosis is made, might prove judicious. Such has seemed to me to be justifiable. I think we may say in all cases of perityphlitis that the time is likely to come when an operation will be imperative, but cases do get well without surgical interference. Often, after the time has come when an operation, as a rule, is imperative, the abscess ruptures into the colon, and a cure is established without the intervention of the surgeon. Nature accomplishes a cure by evacuation of the pus in this way.

I will venture to say a few words on the palliative treatment, which, although it is mentioned on the programme, has not been discussed. It seems to me there should be something done in the way of medical treatment. Surgery and medicine are not so absolutely divorced as some of us would perhaps think, so separate in

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fact that the surgeon can get along without being a physician, and the physician can get along without being a surgeon. Every physician should know something about surgery; therefore I think this disease belongs both to the surgeon and physician. Supposing a case to be brought to the attention of the physician, in which there has been a sudden seizure of pain, with vomiting, the pain radiating to the umbilical region, increased frequency of pulse, perhaps small in character; upon examination there is found to be tenderness over the ileo-caecal region, and there is yet no appreciable tumor or swelling; deep palpation is not practiced for the reason that it is painful and dangerous; there is no blood in the stools, and the history of she case justifies the hypothesis of perityphlitis. Should the surgeon be called in to perform an operation, or are we justified in waiting? If I were called to see such a case in a man between eighteen and thirty years of age, the period of life during which perityphlitis most frequently occurs, previously in good health, possibly some constipation of the bowels, I think what I should do would be to prescribe absolute rest in bed; give to the patient opium, or its compounds, in sufficient quantity to relieve pain first; secondly, to induce absolute rest of the abdominal viscera. I would place over the region of tenderness an ice-bag, or some receptacle for ice-cold water, and keep it cold.

A case came under my observation in which perityphlitis existed for a few days only. Ice was kept over the ileo-caecal region, and at the end of four days a slight induration, which was early recognzied, had disappeared. There was a resolution of the inflamation. Nothing but the plainest liquid food should be permitted, and no violence should be done in the way of opening the bowels. If the case does not resolve under this treatment, if there is increasing tumefaction, and if the general symptoms do not subside, I should think that in the course of three or four days, according to the rapidity of the development of disease—it may be even a week—there would be an accumulation of pus. This indicates surgical interference. Whether there is pus in the beginning of perityphlitis, as Dr. Murphy has stated, I do not certainly know. We do not see the cases early enough, as a rule, except by accident, to determine its existence, but I believe inflammations may and do occur around the caecum and appendix, a paratyphlitis or perityphlitis, without there being an *ab initio* suppuration.

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There is, *first*, hyperaemia; *second*, increased chemico-physiological changes, resulting in exudation of plastic matter, which degenerates rapidly, if in contact with faecal matter, into suppuration.

Dr. A. B. Strong, Chicago:

I would like to say a few words on the subject of perityphlitic abscess, and the point I wish to make is with reference to the obscurity of the symptoms, and the difficulty of diagnosing the presence of pus. If pus is present there is no doubt what ought to be done. I am quite sure most of us have seen cases of perityphlitis where we suspected abscess, and to our astonishment the patient has recovered.

I saw two cases of perityphlitic abscess recently in which pus formed in fifty hours. I opened the abdomen and demonstrated the presence of pus, which had broken through and escaped into the peritoneal cavity, as a result of which a fatal peritonitis was set up. I have seen quite a few of these cases, in which it is exceedingly difficult to demonstrate the presence of pus at an early date. In the cases referred to, one was a young man twenty-four years of age, that had had repeated attacks in the ileo-caecal region, from which he recovered. The same physician had attended him on different occasions. The attack he had last came on in the afternoon. After doing a little work he was seized with a sudden pain in the right illiac region, and went to bed. The doctor was not called until the next morning. There was no fever, but a slight tenderness of the abdomen. The presence of a circumscribed tumor could not be mapped out. The next afternoon I saw the boy; his general appearance indicated the presence of pus. The abdomen was opened and a large amount of pus came out. This was at the end of sixty hours.

In the other case, the attack came on Saturday night suddenly. Sunday night the abdomen was opened and a large quantity of pus let out.

In neither of the cases did the thermometer show a rise of temperature. In neither case could a tumor be made out.

Dr. Henry T. Byford, Chicago:

One point was neglected in the discussion of perityphlitis, which is perhaps the most important of all. Dr. Murphy, from his

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standpoint, is perfectly consistent and correct, viz: That the sooner the suppurative cases of perityphlitis are operated upon the better.

There is a class of patients that has not been touched upon, and that is where there is inflammation about the caput coli, or of the appendix, in which there is no perforation. We may have superficial ulceration of the colon from impaction of fæces. The differential diagnosis in these cases would be the slowness and mildness of onset, and the softness of the tumor, and the fact that the tumor would not increase, but rather diminish in size, as the temperature would go down. There is no doubt but that there are cases of all grades of severity, and some of this kind greatly simulate the severe type of perityphlitis. These milder cases may or may not run into the other class; so that there is a time when medical treatment is called for. It is not right, in my judgment, as soon as we have diagnosed an inflammation about the colon or appendix, to go to work and operate.

Dr. D. A. K. Steele:

I simply rise to commend the masterly idea of Dr. Murphy, of early surgical interference in these cases. The statistics, so well brought forward, showed forty per cent mortality under purgatives, the old plan of treatment sixteen per cent mortality, while under early operation the mortality is only four per cent. Surgeons will have no hesitancy in attacking these cases with such statistics.

I have been unable in some cases to operate on account of the objection of the patient. I have at present a patient under observation, fifty-five years of age, who has encysted intra-peritoneal abscess, which originated in ulcerative appendicitis. He declined to be operated upon. He has, fortunately, for his safety, a thick wall of inflammatory tissues thrown around the collection of pus.

Another patient, a young girl, declined operation at first, in which there was a general suppurative perityphlitis. Opening of the peritiphlitic abscess revealed ulcerative appendicitis, with extension of the suppurative inflammatory process to the peritoneal cavity, and death from sepsis.

A third case was in a young girl who was in a collapsed condition, and who declined operation. I made an autopsy and found ulcerative appendicitis, with a circumscribed abscess, the autopsy

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showing that the abscess had ruptured into the peritoneal cavity. If two of these cases had been operated upon early, life would have been saved. In one case an early operation was advised, and refused. The patient is still living, with a constant source of danger. He will probably have a recurrence of acute suppurative trouble in the neighborhood of the present pus collection, which will necessitate an operation in the immediate future. I certainly strongly favor early operative interference.

DR. C. TRUESDALE, ROCK ISLAND:

I have but a few words to say in regard to nephritic calculus. I have, like the gentleman who read the paper (Dr. Caldwell), suffered two or three times from renal calculus. I have never made any microscopical examination of my urine, and I have not been able to detect anything abnormal about it by inspection. I have never suffered from any particular pain in the region of the kidney. The only pain I ever had was during the passage of the calculus through the ureter, which convinces me that calculi may form in the kidney and remain there some time without producing any pain whatever. That they do produce pain is unquestionable, but that they may form in the kidney and remain for some length of time without producing pain in the kidney, I am satisfied from my own personal experience.

A case came under my observation about a year ago last spring which illustrates very forcibly the difficulty of diagnosticating disease in the kidney. The patient was forty-five years of age. When he presented himself to me he was suffering from what seemed to be chronic cystitis. He passed urine very frequently. He passed a large amount of mucous, mixed with pus, and complained very little of his kidneys. He complained of some pain in the left kidney, but complained more of pain in the region of the bladder, and of frequent urination; and the prominent symptoms of the case indicated chronic cystitis. After a time, I began to make some examinations, with a view to determine whether there was any trouble with the kidneys. An examination revealed pain and tenderness over the left kidney, and after awhile I succeeded in eliciting slight fluctuation, which led me to suspect the existence of suppuration, either in the kidneys, or in the connective tissue around the kidneys. I aspirated it and found pus. The man, two

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weeks before I did this, rode four miles in a buggy and walked a mile, and made no particular complaint of his kidney at all. I finally performed the operation of nephrectomy. I found that the entire kidney was almost gone—perfectly honey-combed. I found an abscess about the kidney which discharged, I think, in the neighborhood of half a gallon of pus. It had forced the kidney up under the ribs, so that I failed to get the ligature around it. I therefore put a pair of pressure forceps on the pedicle or what was left of the kidney, left it there and removed the balance of the kidney and dressed it. In the course of a week or two the man died.

I refer to the case to illustrate the great difficulty in diagnosticating surgical affections of the kidney.

DR. J. W. COWDEN, ROCK ISLAND:

I have investigated the literature of perityphilitis lately, and I was very much pleased with Dr. Murphy's paper. I fully agree with him that an early operation should be performed.

I operated on a case of nine months standing, and at the time I saw the patient she was in a moribund condition. After administering chloroform, I opened the abdomen, and found a large abscess which discharged over two quarts of pus. I performed the operation recommended by Dr. Sands. In about one month from the time the operation was performed, the wound healed up. About two weeks subsequently, she suffered from a severe pain in the region of the cæcum; lost her appetite, and I was satisfied there was something there. The wound was reopened, pus evacuated, a drainage tube introduced, and five days thereafter the parts were healed perfectly.

I think statistics show, as Dr. Sands proved in articles he wrote some years ago, that there are many cases of perityphlitis without pus; that there are many cases that get well without operative interference.

The point, however, which I wish to make here to-day, is one which I have not heard brought out by any of the preceding speakers. It has been demonstrated, I think, that perityphlitic abscess may form, and, instead of pointing toward the surface, pass backwards and up behind the kidneys, and may be mistaken for something else. The peculiar manner in which the peritoneum is

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situated where the appendix is covered, allows the abscess to pass up in that direction, and it may be taken for a lumbar abscess. I know of two cases of this kind which proved to be cases of perityphlitis.

DR. J. A. FREEMAN, YORKVILLE:

I have been called in consultation in one or two instances, in which there was some doubt expressed as to whether there was perityphlitic abscess or not. In these cases, I have introduced a hypodermic syringe to assist in making a diagnosis, then I have aspirated without further operation. I did this in the case of a boy nine years old. I aspirated a second time, drew out a small amount of pus, and the boy recovered.

Last spring, in a case Dr. Hard saw with me, the patient objected to an operation, although there were symptoms indicating the presence of pus. We were both uncertain as to the presence of pus then, but three days after the onset of the difficulty, I was satisfied there was pus present, and I verified it with a hypodermic syringe. I drew off four ounces of pus. The patient made a rapid recovery; no recurrence.

I do not think there is such a pressing necessity for immediate operation as some of the gentlemen in their remarks would lead us to believe.

DR. J. B. MURPHY, CHICAGO:

It has been my misfortune to have seven penetrating wounds of the abdomen upon which I had the opportunity of operating. Of the seven cases, three terminated successfully, four died. The last case, which was about six weeks ago, occurred at the Cook County Hospital. The patient was shot from behind, the ball passing just in the center of the 12th rib. The direction, after it had passed through the rib, could not be ascertained. The patient was kept outside, explored, and examined for several hours before he was brought into the hospital. On examination at the hospital, the little finger could be passed into the enlarged opening in the rib. The patient had a normal pulse and temperature, somewhat collapsed otherwise, and complained of a great deal of pain in the abdomen. Percussion revealed nothing. The question came up as to whether or not it would be advisable to use gas for the exam-

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ination and it was decided not to do so; that if there was perforation there would be an escape of fæcal matter into the peritoneal cavity. It was decided to make a laparotomy. This was done. On examination, it was found the bullet had passed through the liver and into the abdomen. A considerable quantity of blood was found in the abdominal cavity, but no perforation of the intestines. The abdomen was sewed up; the patient was in excellent condition the following morning. The following evening he had a temperature of 102. Thirty.six hours after the operation the temperature was 108, and the next evening he died. Post-mortem examination revealed no perforation of the bowel, but slight suppuration in the wound in the back. There was primary adhesion of the abdominal wound in front. No peritonitis. The patient undoubtedly died of acute sepsis from the point of suppuration in the back.

In another case, the patient was shot from the front, the bullet passing into the abdomen. There was no evidence of perforation; no fæces at the external opening. Percussion revealed no dulness. There was no blood found in the patient's urine. The bullet passed inwards and downwards to the left of the umbilicus. A laparotomy was decided on. Assisted by Dr. Lee, I performed the operation. There were three perforations of the intestines. These were united, and the abdominal cavity washed out. The patient was in excellent condition for forty-eight hours after the operation. After that he suddenly began to sink. Immediately after the operation the patient passed blood. The location of the bullet could not be found. There was an opening in the posterior wall of the peretoneum, just a little below and to the inside of the kidney. It was not ascertained that the kidney was perforated. As the urine was bloody after the operation, it was supposed that either the ureter, the bladder, or the kidney was wounded. The The post-mortem was made the day after death took place. There were no wounds of the kidney, ureter or bladder, but there was ecchymosis and hemorrhage from the bladder. The patient had no peritonitis.

Of the other cases that died, one died from hemorrhage of the renal vessel, one of its coats having been injured at the time of the accident, rupturing subseqnently. Another died of peritonitis. The number of cases operated upon over the entire world, as far as can be ascertained, and the results thus far obtained, are very

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satisfactory. In 1887, at the International Medical Congress, only thirty-nine cases were reported. The percentage of recoveries at the present time is such as to fully justify an exploratory operation.

DR. L. L. MCARTHUR, CHICAGO:

In this connection, I might report two cases which have occurred during the past year at the Michael Reese Hospital. Both were stab wounds of the abdomen, with the omentum protruding from the wound, and in one case the omentum was very dirty. In both cases Senn's hydrogen gas test was applied; the colon and small intestines were inflated; no gas escaped from the abdomen. In the case in which the omentum was soiled, that portion was ligated and amputated. The wounds were both sealed with idoform collodion and both cases made a good recovery.

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REPORT OF THE COMMITTEE ON OBSTETRICS.

J. S. MILLER, M. D., PEORIA, CHAIRMAN.

To state that nothing new or of interest worthy of consideration has developed since our last annual meeting, would be to admit (in the language of brethren of the legai profession) that this branch of medicine is in *statu quo*, an admission far from truth. More than ever before in the history of medicine, there is a noticeable desire on the part of obstetricians to add to the already existing fund of information. Experiment, investigation and research are coupled to the car of progress, and so rapidly are we being hurried along, that what to-day is new, is on the morrow old, and alas, too often on the next, neglected or forgotten. A careful review of the literature of the past reveals the fact that many of the methods in vogue at the present time, and accepted as new, were employed to fulfill the same indications by "ye old-time doctors." Old subjects on which new facts have been gathered, or of which new interpretations have been made, may demand fresh presentation. Fashion obtains in medicine, and the branch of obstetrics is not exempt from its demands; like fashion in other departments of life, styles are revived after long repose; with each transition, much that is useful is retained and comes to be acknowledged as sound practice. Safety demands that new methods receive the most thorough consideration, for so enthusiastic the votaries of new theories become, in pursuing certain lines of investigation, that it

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is not surprising if their zeal carries them to excess. "In the midst of the enthusiasm incident to an unprecedented progress made in our profession, it is no easy matter to maintain an attitude which shall shield us from being, on the one hand, too radical, and on the other, too conservative." One of the most healthful signs of the time, is the scrutinizing investigation to which new methods are subjected. Individuality is more noticeable to-day than ever before. Men are thinking for themselves, and are slow to accept the opinions of others as final, until accumulative evidence demonstrates beyond a doubt the correctness of such opinions. If we glance over the proceedings of this and other societies, it is obvious that much thought and consideration has been given to the prevention of puerperal diseases, by the employment of anti-septic measures; and the fact that these stand out so prominent, and enter so largely into the discussions, must be conclusive evidence that they are worthy of continued study and observation. "Before the introduction of anti-septic precautions, lying-in hospitals were regarded with disfavor, and the propriety of closing them by legislation seriously contemplated; since their employment the rate of mortality" is said "to have been so greatly reduced, as to make women safer within than without their walls." It is reserved for us to determine to what extent anti-septic precautions are responsible for the flattering results obtained. The employment of anti-septics, in general surgery, especially in abdominal work, has undergone quite a revolution. In the majority of large hospitals, the spray and Listerian methods, deemed so essential a few years ago, are almost entirely abolished. "Savoy, senior surgeon to St. Bartholomew's hospital, has discarded anti-septic treatment of wounds." Lawson Tait does not advocate the employment of anti-septics, but attributes his success to improved methods of operating, and more extended experience. Dr. R. S. Sutton, of Pittsburgh, in a

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report of one hundred complete laparotomies, made to the Pittsburgh Obstetrical Society, says: "About five years ago I abandoned all Listerian methods, trusting to good surgery and scrupulous cleanliness for my results." Koch asserts that mercuric solution in a strength of one to four thousand, roughens the skin, also the vaginal mucosa, and in view of this fact, the frequency of the injection should be limited as much as possible. Keith declares, that on account of disturbances and interruptions attending the vaginal douche, he has discontinued its use; that he considerably surprised his nurses by directing that no injection be used unless specially ordered, and that since 1882 in only a small per cent of cases, had he had occasion to resort to vaginal injection. "In 1884 Dr. Charles Jewett instituted in the Long Island Lying-in hospital, an inquiry into the comparative merits of vaginal injections, and that the temperature records show no evidence in favor of the douche." Dr. T. G. Thomas remarks that he has become a little weak regarding the propriety of the use of vaginal injections. Lister, in an address delivered before the Medical Society of London, says, "When I last had the honor of addressing this society, at the request of its President, I brought before you an attempt I had made to utilize the powerful anti-septic properties of corrosive sublimate, without the great disadvantages attendant upon its highly irritating qualities. It has been demonstrated that germs live in a solution of carbolic acid anything less than five per cent, and thrive in solutions of the strength which were generally used for vaginal injections, so for them to be efficient as a germacide, it becomes necessary to use a solution of five per cent or over." Owing to the danger attending the use of solution of this strength, carbolic acid has almost entirely disappeared from obstetric practice. Its successor, chlorosive chloride of mercury, has enjoyed the confidence of the profession for a number of years, but at the present time there

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seems to be a doubt in the minds of some obstetricians as to the propriety of employing it as a routine practice; and the promiscuous douching of the vagina with chemicals which exert an injurious action upon the vaginal mucosa, as demonstrated by Koch, or which, by being absorbed, produce toxic effects, is noticeably on the decline. More attention is bestowed upon prophylactic measures. The former is intended to destroy germs lodged in the vagina, and uterine cavity, and is curative, while the latter is practiced to prevent them from coming in contact with absorbent surfaces. If the aseptic method could be carefully carried out, and if it be true that puerperal septiceamia is never autogenetic, rigid asepsis should stamp out puerperal fever, and make anti-septic douching unnecessary. Possibly the attention bestowed upon anti-septics and anti-septic methods has overshadowed what is looked upon as minor considererations; correlative with their growth, lying-in hospitals has improved both as regards construction and management; instrumental assistance is more frequently rendered and earlier resorted to in protracted and tediously painful labors, while skilled nurses detect, and, by the timely administration of remedies, prevent, what would, under the less favorable environments of former years, have resulted in serious or dangerous complications. The most recent device for preventing infection from without, is an apparatus devised by Kirschkaroff, by which delivery is accomplished while the parts are immersed. This apparatus is in the form of a tub, with a back piece to support the spine, in which the patient is placed in such a manner that the lower part of the body and generative tract is constantly submerged in sterilized water.

Of the various preparations in general use for securing immunity from the pains of parturition, chloroform continues to be the agent deserving of the greatest confidence; although almost universally employed, it has

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enjoyed a remarkable immunity from accidents in labor. Cases are rare where the judicious administration of this drug has been attended with any but the very best results, and where those accidents attributed to its use, such as post partum hemorrhage, irregularity of uterine contractions, and sudden deaths, would not have occurred, had not the anaesthetic been employed. Dr. J. C. Reeves, in the "American System of Obstetrics," in considering the danger attending the use of chloroform in labor, says "A careful study of the subject of accidents from chloroform during parturition justifiesthe following statements: 1. But one well authenticated case of death is on record where the administration was by a medical man, and in that case no autopsy was held. 2. Dangerous symptoms have occurred but a few times, and then almost always from the violation from the rules of proper administration. 3. The danger when chloroform is used to the extent of mitigation or abolition of the suffering of child-birth, is practically 'nil,' when carried to the surgical degree of obstetrical operations, the danger is far below what it is in surgery; no proof can be furnished that the paturient woman enjoys a special immunity from the dangers of anaesthetics, although facts seem to indicate that such is the case; her best safeguard lies in the care and watchfulness of the administrator." Its administration is followed by a "condition of physical and moral calm," uterine contractions are regulated and strengthened, while under its relaxing iufluence the os and perineum becomes less rigid, and dilation is more rapid and less painful. Post partum haemorrhage following the employment of chloroform has been advanced as an argument against its use. My observation confirms me in the opinion that flooding follows labor in about a certain proportion of cases, and that anaesthetics are not responsible for this accident. Anaesthetics are indicated, and are especially useful: 1. In primipara who are nervous and excitable

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and in whom the pain may even cause delirium, also those with whom the labor is greatly prolonged. 2. In all cases in which there is a spasm or rigidity of the neck or body of the uterus. 3. In puerperal eclamsia, whether apoplectic, hysterical, or uraemic, and in cases where there is a tendency to puerperal mania. 4. In obstetrical operations, except those attended by a great loss of blood, and where anaemia of the brain is present. Contra indications are the existence of placenta priva, general prostration, alcoholism, cerebral, and some diseases of the circulatory and respiratory organs. Anaesthetic mixtures employed and recommended possess no advantage over chloroform, which is the anaesthetic "par excellence" in labor. Dr. Krentzman, of San Francisco, employs a mixture of three parts of chloroform and one each of alcohol and aether; through this mixture the patient is permitted to inhale oxygen gas. Dr. Krentzman asserts that this combination is more rapid in action and the effects more transient, resembling closely nitrous oxide gas. During the past year antipyrine phenacetine, exalgine and acetanalin have received much attention, and, considering their well-known anaelgesic properties, it is not surprising that they should be resorted to with much confidence. Reports as to their utility, however, are conflicting; while some observers record most beneficial results, others assert that their use has been attended by alarming depression and profuse post partum haemorrhage. My own experience with this drug has not been such as to inspire confidence in it as a remedy in mitigating the pains of parturition. In one case the administration of twenty grains of antipyrine was followed by profuse post partum haemorrhage and alarming syncope, which required vigorous stimulation, both local and constitutional. I am not fully persuaded that the condition was induced by the action of antipyrine, but I am forcibly reminded that had chloroform been the agent employed, the accident would in all proba-

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bility been imputed to its use. In the condition known as false pains, which so often anticipate labor, as well as after pains of a neuralgic character, I have witnessed the most satisfactory results follow the use of antipyrine, administered in from five to ten-grain doses every six or eight hours. It is free from many of the objections urged against the preparations of opium, and while it controls in a remarkable manner pains of a neuralgic character, it does not appear to influence true labor pains. Among the more recent and novel means of securing immunity from pains, and attracting considerable attention at the present time, is the induction of the hypnotic state. Vanier, Carl, Braun and others report cases where this method has been successfully practiced. A correspondent of the *Medical News*, writing from Paris, says Dr. de Grandchamps has used hypnotism in one of his hospital cases with the most gratifying results; the patient, a girl seventeen years old, with no signs of hysteria, was admitted to the hospital at the fifth month of utero-gestation. In order to prepare the patient for the experiment, Dr. de Grandchamps hypnotized the girl two or three times a week, with, it is asserted, great benefit to her general health, for she was very anaemic. While labor was in progress and the pains severe, the patient was hypnoitized, and directed to bear down when the contractions came on, but was informed that she would feel no pain. Wishing to increase the rapidity of labor and contractions, he commanded her to bear down every minute. The order was obeyed, and every minute a contraction took place, followed by a moment of repose, which soon brought the head to the vulva. Being a primipara, and fearing too hasty expulsion, the order to bear down no longer was given and obeyed. The head and trunk was delivered slowly, without intervention on her part. A quarter of an hour after the young lady awakened, and could not believe she had been delivered.

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There is nothing connected with obstetric practice that gives me more pleasure to note than the decline of the almost universal practice of administering ergot to stimulate uterine inertia. The danger to both mother and child are so well recognized as to need but passing notice. Engleman, in the "American System of Obstetrics," says: "The use of this powerful and dangerous drug, which attained a most unpardonable expanse, is being rapidly limited to its proper sphere. Developed to a dangerous extent, it became so common that it was given by midwives and nurses, and but few labors were completed in which ergot was not given by the general practitioner throughout the land. It was relied upon in expulsion of the foetus, and in cases in which the forceps should have been used." Dr. J. W. Hyde, in a most excellent paper on the danger of ergot in obstetrical practice, vividly portrays how this agent produces most frightful mortality in infants, and how it is responsible for sloughing of the soft parts, retained placenta, sub-involution, and even uterine displacement. "Ergot," remarks Dr. Hoosac, "has been termed the *pulvis ad partum;* as it regards the child, it may, with almost equal truth, be denominated *pulvis ad mortem*, for I believe its operation, when sufficient to expel the child in cases where nature alone is unable to the task, is to produce so violent a contraction of the womb, and consequent convulsion and compression of the uterine vessels, as to very much impede, if not totally to interrupt, the circulation between mother and child."

Accumulative evidence seems to demonstrate the impropriety of employing this drug, except in rare instances, during parturition. The only condition in which it may be employed is so clearly defined by Dr. G. Wheeler Jones in a report read before this Society at Rock Island, in 1888, that I have embodied his experience in this paper: "There is occasionally a case where the presentation is correct, the

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cervix fully dilated, soft and flaccid, the vagina and vulva in a moist and relaxed condition—in fact, where everything is ready for the termination of labor, and no possible obstruction thereto—but the pains are weak, inefficient, or too short. In such cases I have sometimes given of a reliable preparation of fluid extract of ergot one dose of ten or twelve drops, with the happiest results, and never with any bad effects." Dr. Jones, however, when the above conditions obtain, expresses a preference for the forceps, and states that he resorts to ergot because of the opposition usually urged against instrumental assistance. This prejudice, born of association (for formerly instruments were used only as a "dernier resort," and, when suggested by the physician, struck horror to the hearts of friends and relatives), is happily being eradicated from the minds of the laity. It is, however, unnecessary to regret the decline of a drug unmanageable and fraught with so much danger, when we can command an instrument entirely devoid of objections and which, in the hands of competent and conscientious obstetricians, is under perfect control, and which can be made to meet all of the indications for which ergot was formerly given.

Prominent among the more recent obstetrical procedures, and justly deserving consideration, are the improved methods of extracting the foetus by abdominal section. The labors of Saenger, Porro and others have awakened a new interest in this operation, and has secured for it recognition in all parts of the civilized world. This method of delivery was known and rudely practiced as far back as the sixteenth century, but did not become firmly established until after it was demonstrated that the abdominal cavity could be opened with, not only a reasonable hope, but an almost certain assurance of success. The favorable results obtained in hysterectomies since the advent of improved methods of operating has stimulated renewed efforts on the

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part of obstetricians to avert, if possible, the great sacrifice of foetal life so common in former years, and has emboldened surgeons to invade regions which a few years ago were approached with trepidation. Dr. Samuel C. Busey, in an address delivered before the Washington Obstetrical Society, makes the assertion that craniotomy is no longer justifiable under any circumstances. He estimates that annually 6,880 lives are destroyed in this country by craniotomy. The present mortality of the modified Cæsarean section is reported as 72 per cent, but confining statistics to this country, the mortality is found to be but 45 per cent. The maternal mortality in craniotomy is two or three out of one hundred cases. In summing up, Dr. Busey says the issue then resolves into the actual or relative value of five or six women as against eighty-seven infants. The *Medical Record*, March 23, 1889, contains an editorial by Dr. Shrady, criticising Dr. Busey's paper. He says: "The exact mortality from Cæsarean section, when done by general practitioners and non-experts, is not known, but it will be long before we may expect that every country doctor can do it skillfully. Meantime, even in the hands of skilled surgeons, in this country the mortality to mothers is 45 per cent; hence it is really in America a question of fifty-five mature lives as against those of one hundred foetuses; this in well-equipped hospitals and under conditions most favorable for delicate surgical work." Dr. Shrady further adds: "We take it, however, that the most fallacious portion of Dr. Busey's argument is in his balancing five or six mothers against eighty-seven foetuses or new-born infants. Of these eighty-seven, less than one-half will grow to maturity, and, when mature, five per cent will belong to defective or dependent classes. This reduces the equation to five or six useful lives, as against forty. But, according to American statistics, 55 per cent of mothers die from Cæsarean section. Hence we have a question of fifty-five mature, useful lives lost by section, as against the gain of

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forty potential adults." The greater facility with which craniotomy may be performed has undoubtedly led to the unnecessary destruction of many infants. However, to assume that it is an operation never to be undertaken, is altogether too arbitrary. There are, many times, more weighty considerations than the uncertain life of an unborn child to be taken into account before an operation involving a mortality of 55 per cent. should be proposed. Opinions as to the amount of deformity justifying laparo-hysterectomy appear to be governed by sectional prejudices. In Great Britain, where the mortality has been 80 per cent under abdominal operations, the opposition to its performance has given the craniotomic alternate in women having a true conjugate of two and one-half inches and less, a much higher rate of mortality than the improved Cæsarean operation has shown in Germany, where the loss has been twelve in eighty."

Records of the past year show an increase of laparo-hysterectomies, with a lessened mortality rate. This favorable showing is accounted for, first, by an earlier resort to the cut, and, second, to the method of operating known as Sanger, and which relates more especially to the manner of closing the uterine wound by multiple deep and superficial sutures, and also the means employed by which the peritoneal surfaces are secured to the uterine incision by the serous stitch of Lembert. Porro's operation is attracting much attention, and is said to be more successful than the improved Cæsarean cut.

Lawson Tait describes, in the following language, his method of performing: "I make an incision through the middle line large enough to admit my hand and then pass a piece of rubber drainage tube as a loop over the fundus uteri and bring it down so as to encircle the cervix, taking care that it does not include a loop of intestine. I then make a single hitch and draw it tight around the cervix so

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as to completely stop the circulation. I give the ends of the tube to an asssistant, who keeps them well on the strain so as to prevent the loose knot from slipping; the reason for this being that should there be any bleeding and any necessity for further constriction, I could secure this in a moment without undoing any knot, and the simplicity of this method greatly commends it. I then make a small opening in the uterus and enlarge it by tearing with my two forefingers, seize the child by the foot and remove it. I then remove the placenta, and by that time the uterus has completely contracted and it is easily drawn through the wound in the abdominal wall. The constricting tube will now probably require to be tightened, and the second hitch of the knot may be put on at the same time, and the work is practically done. Stuff a few sponges into the wound to keep the cavity clear of blood, and pass knitting needles through the flattened tube and through the cervix, and in this simple way a clamp of the most efficient kind is at once made. The uterus is removed about three-quarters of an inch above the rubber tube. The usual stitches are put in, the wound closed round the stump, which is, of course, brought to the lower part of the opening, and then the stump is dressed with perchloride of iron in the usual way. The operation takes far less time to perform than it takes to describe, and as there is hardly any possibility of complications, it is one of the simplest operations that can be undertaken, and must always be pretty much the same; for this reason no one need be in fear about undertaking it, for in the absence of variations in the difficulties to be encountered, it differs entirely from any other operation in abdominal surgery."

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CONTRIBUTION TO REPORT ON OBSTETRICS.

BENJAMIN H. HARRIS, GROVELAND.

The Logic of Progressive Midwifery.

It will not be denied that in the last two decades, patient and well-directed obstetric research has resulted in the accumulation of a series of important facts, forming a basis upon which it may be possible to erect an enlightened and permanent system of practice. It has also become too obvious to justify dissent that the tendency of thought and teaching within the same period has been in a direction gradually departing from the doctrines that held parturition to be a physiological act, and assuming more and more a position that renders it necessary to regard it as a pathological process. Very many of the great teachers of obstetrics inferentially maintain that the fœtus must be regarded by the accoucheur as a foreign body in the uterus, whose extrusion must be accomplished by a process of diseased and traumatic action. The physician appears on the scene and presides over the progress of events, at first, as the guardian angel of prophylaxis, but armed with all the weapons and resources of perfected art to evict the internecine usurper, should the vital forces of the maternal economy loiter or appear impotent in expelling the intra-mural foe menacing the health and life of its host. Having dispelled from the lying-in apartment all those ever-present lethal agencies that elude the natural vision, by the use of the infallible

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means vouchsafed by modern science, he awaits in masterly inactivity the imminent moment when duty shall summon him with sterilized and polished steel innocuously to penetrate all opposing structures of the anæsthetized patient, and, seizing upon, bear away in triumph the entozoal evil. To keep abreast with the rapid march of discovery in obstetric investigation, or even to acquiesce in the routine of procedures its array of established facts demands, imposes such a mental strain upon the opinions, and occasions such a disagreeable reverse twist upon the habits of the great mass of general practitioners, that those of them who lie lazily moored to the dogmas of the past refuse to advance into the increasing light of the present, or, with reluctant step, linger far behind in the shadow of those whose conscience and love of truth urged them to the front.

A brief review of accepted obstetric truths and their resultant practice established at the present time, or, rather, their contrast with the teachings of the older masters of the art, will exhibit the extent of real progress made and demonstrate the superiority of modern supervision and control of the parturient act, and at the same time will be an apology and justification of the tone of the preceding remarks. To contemplate parturition as a physiological process would be a delightful employment of the imagination, if in experience it would materialize into reality, and did not, unfortunately, in its sequel become a perilous illusion. Such complacent speculation in the past, when regarded as furnishing reliable instruction indicating the treatment proper in the conduct of labor, has been productive of much needless suffering and often of the untimely exit from the world of both mother and child. It would be unjust to suppose that the former teachers of obstetrics were less intelligent, conscientious and humane than those who lead in the profession to-day. But their devotion to the theory that childbirth was a purely physiological act cocalned their sensibil-

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ities to the impression of painful contrary facts, clothed them with an acquired indifference to suffering and produced a stolid expectancy of treatment that allowed their parturient cases to pass through a slow ordeal of torment unto death without the saving intervention of the aid of therapeutics or of art; or if, indeed, invoked as a last resort, only too late to be effectual for relief. Oblivious to the existence of the ubiquitous pathogenic microbe, they were innocently unaware of the necessity, and ignorant of the means requisite, to protect their patients from toxic germ invasion; and for the same reason sadly neglectful in the observance of aseptic cleanliness for themselves and in exacting such precaution regarding the arrangement of the lying-in sanctuary. The discoveries of science and a practice in harmony with their teaching have happily reversed the scope of traditional obstetric attendance. The accoucheur now realizes that his vocation means something more than perfunctory visitation. It embraces duties to be performed with a relevant purpose of action, making him an exorcising priest bearing the censor of Asepsis, before which the microscopic sprites of morbific malice yield up their existence, surrendering as a trophy to Hygeia the life they were assembled to destroy. Omitting the mandate that commits the patient to the durance of an unalterable decubitus, he commends to her the freedom of such positions as unthwarted instinct would induce her to assume, reserving postural directions for the period of the expulsive throes of travail, when their efficiency may be increased by observing the indications furnished by the lights of anatomy and science. The merciless maxim, "Let nature take her course," once so loyally taught, and by most practitioners so inconsequentially transgressed, forbade the alleviation of suffering during the first stage of labor by the administration of ameliorating remedies, thus rendering their absence or presence, as far as mitigating suffering or expediting de-

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livery were involved, indifferently inefficacious. The not more kind, but more philosophical, accoucheur of the present, recognizing the futile contraction of mere segments of uterine fibre as the frequent cause of the intolerable annoyance experienced in the attainment of ample cervical dilatation, by the watchful employment of atropia, chloral, morphine, the bromides and their kindred obtusors of discomfort, accord to their patients a grateful respite of pain. And then, when the second stage is reached, and the inexorable expulsive forces rush on to the accomplishment of their task, the impervious shield of chloroform analgesia is interposed to obtund their poignancy, and deliverance is achieved with the extrusive rage robbed of its anguish. Given a normal or but slightly contracted pelvis, delay in the termination of labor is inexcusable, as it is prolonging a period of suffering and danger that, with the facilities for delivery afforded by modern art, ought not to be permitted to exist. The forceps, properly applied, usurps no pelvic space necessary to the passage of the head, places it safely under the control of the accoucheur, and almost at his pleasure obviates the tediousness of parturition. Equally felicitous is the progress made in the conduct of placental delivery. Traction upon the cord, and the invasion of the matrice by the searchful fist, must soon be relegated to desuetude. Sluggish secundines, lingering too long in their nidus, obedient to the solicitation of massage and expression, will, like the Arab, "fold their tent and noiselessly steal away." The good day is coming, and now is, when the hapless physician shall not toil through weary watches of the night, essaying by digital examination, infectious to his patient and disgusting to himself, to diagnose position and presentation, experiencing the fate of Sisyphus, ever finding his burden of doubt rolling back upon him, till an extra vulvular cranial protuberance solves the then bootless problem. The revelations of interior conditions now af-

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forded by educated external manipulations, happily, banishes from display, and also from maternal contact, the oiled, immodest finger, and makes the expert practitioner, though doubtless oft mistaken, as much a master of the situation as ever became the attainment of the disciples of digital exploration—a statement that will not be questioned after a frank and fraternal professional inter-confession has been delivered by those whose province it is to determine the regional point of the fœtal ovoid that offers itself at the pelvic brim.

By masters of the learned touch, rectification of malpositions and versions, when necessary, are accomplished by rational maneuvre from without, and are now more facile operations than they were in the days when relief in such cases came only through a forced, painful and perilous entrance into a sensitive and resentful territory that careful nature supposed was sealed against strange intrusion. Thus, while obstetric progress, advancing only through a score of years, has proved destructive to all theories of parturition based upon physiology, and has logically developed a new practice that is rapidly replacing the old, it, nevertheless, is not without claim to conservatism, having declared the uterine penetralia consecrated recesses, tabooed against the entrance of the human hand and all prying visitation, beneficently excepting the heroic forceps, the gentle curette and the lustrative antiseptic douche. It is true that nearly all the human family, since the epoch of its last evolution from the type below, has been born into the world without the aid of professional attendance. It is also true that researches made by advanced thinkers in the domain of midwifery, notably by the author of "Labor Among Primitive Peoples," obliges the admission that among savage tribes the pregnant female instinctively adopts for herself very proper sanitary arrangements, and meets (without imperturbation) the exigencies of child-birth; and with such untutored

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success that she enjoys, in consequence, an ephemeral, painless and undebilitative puerperium. These and other unmentioned facts only suggest the reflection that there is yet an unadjudicated case of Nature versus Science and Art awaiting decision, and are not introduced here by the writer (whatever his sincere opinion may be), to discourage the efforts or shake the faith of those who toil in hope that science and art, that have ever been twin messengers of mercy to man, may yet visit woman bearing with them the boon that shall banish from motherhood peril and pain.

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SPECIAL COMMITTEE ON OBSTETRICS.

LUCINDA H. CORR, M. D., CARLINVILLE.

The Pathology and Therapeutics of the Puerperal State.

In choosing this subject I do not do so because I know so much about it, nor because there is accessible literature upon which to compile a paper, but because it is one of very great importance and needs developing.

It lies at the foundation of Obstetrics, and embraces all there is of it except the mechanical science; yet it scarcely finds a name, as such, in any of our text books on that art. For convenience I shall divide the condition of gestation and delivery into two stages. From conception to the time of delivery, the *gravida*; that including the delivery and until complete natural involution of the uterus and vagina —about a month in duration—the *puerpera*. Both terms are used by Barnes.

The gravida period in some women, from the very commencement of conception to the full term, is one of invalidism; but in the majority of cases there is a much better development of the whole physical make-up than before; so much so, that probably, as a rule, consumption existing in the case, is stayed in its progress, and even rarely cured.

Physiologists agree that the condition of the gravida is one of comparative anæmia with increased nutrition; that is, while there is diminished amount of blood, corpuscles and albumen, there is an increase of all the other nutritive ele-

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ments and an increase of fibrin and water. In the language of Neurology, while there is diminished quantity of red blood-corpuscles, there is increased activity of the trophic nerve centers. With these conditions there is increased excitability—irritability or susceptibility—of the nervous system and increased vascular tonus, or tension of the circulation; the pulse is more full and strong.

With these conditions there also exists all those necessary to the special growth and development of organs suitable to the endo-genetic process of reproduction; the abdomen becomes gradually distended by internal expansive force, so that besides its ordinary contents, it contains an organ seven and fourteen inches in its respective diameters. The muscular fibers of which this organ is composed, ordinarily almost microscopic in size, become developed into cords as large as the finger. The small venules and arterioles become developed into large tortuous sinuses. The whole circulation would have increased tension because of the size of this organ alone. In this organ is growing a new being, calling for a greater supply of nutrition and greater constructive energy on the part of the mother. Additional constructive pabulum must be provided for by her circulation. All her constructive, disintegrative and eliminative activities must be quickened, while her mental and intellectual equilibrium, so necessary to properly impress her offspring, must be maintained.

All this must go on at gradually accelerated speed, from the moment when conception began to the hour when the expulsion of the fœtus is begun; until the gravid state has ended in the initiation of the puerperal. Super-added to all these conditions of the gravida at the initiation of the puerperal state, are those of mental anxiety, pain, muscular exertion, crampings, tenesmus, dilation of tissue, stretching of parts, irregularity of circulation, abrasions, lacerations, the creation of thrombi by the sliding of tissue on tissue and

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rupture of blood vessels—all in accelerated degree, until every muscle, nerve, and all energy culminates in the throes which expel the fœtus, when all the conditions are revolntionized.

All the constructive and nutritive material and energies, so necessary up to the instant when the placenta is separated, are at once whirled with velocity into requirements for excretion, disintegration and the repair of traumatic injuries.

With the loss of a greater or less amount of blood and the expulsion of the distending body from the abdomen, passes the condition of vascular tension peculiar to the gravida and there is substituted one of vascular flaccidity and mechanical osmosis.

The system is full of waste material. There are lacerations and abrasions to heal, thrombi to absorb, a large muscular organ to reduce to former proportions by the process of what has been called "fatty-degeneration." The site of the placenta has been fitly compared to the recently amputated stump.—*Cruvelhein and Furgeson.*

And yet there is a deficiency of red corpuscles, the physiological oxygen carriers, which are so necessary for these repairs.

Now, we have every suitable element for the development or septicæmia. I can imagine no more perfect arrangement for the empoisoning of the system than these conditions for the absorption of decayed and decaying blood. We have the conditions here for three different modes of infection.

The abundant waste material and the thrombi, with diminished pure nutrition and corpuscles and consequent insufficient oxygenation, are sufficient for endo-genetic infection, and, with decaying discharges, will cause exo-genetic sepsis or toxemia. These conditions for auto and exo-genetic

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infection are also most favorable for hetero-infection, or that from the hands or instruments of the attendant.

There is a reasonable doubt in my mind that the nervous and mental excitability of the gravida change equally rapidly with the circulation, else the mania which I have seen arise at this period is not strictly a puerperal disease.

The general conditions of the puerpera, complicated with disease or un-hygenic surroundings, will cause delayed or hyper-involution.

The requirements of nursing, coupled with neglect to harden the nipples during the gravid state, give rise to fissures, milk-abscess, or even mastitis.

In the therapeutics of the puerperal state, I will confine myself, for want of time, to prophylaxis.

The gravida should by all means be instructed how to develop and prepare the nipples for the severe drawing and maceration to which they are to be subjected. Frequent exposure to moisture and drying, with manipulation, should be ordered. It matters not what liquid be used. It is the wetting and drying that hardens them. Pressure by clothing should be avoided except such as is sometimes required to support a large or pendulous breast. Every restraint should be removed from the waist and abdomen.

As a general rule the gravida needs no medication unless for inter-current affections.

When this is the case, there are cautions which should be remembered. The susceptibility of the nervous system and increased tension of the circulation indicate a more liberal use of the arterial and nervous sedatives and a more guarded use of remedies which may increase the excitement of either.

In this connection I would mention ergot, digitalis, nux vomica and its alkaloids, for their known property of increasing vascular tonus, which would produce apoplexy of the placental circulation, or cause other injuries due to high

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vascular tension. In fear of exciting mental or other nervous disturbances, I would cautiously use cannabis indica, belladonna, stramonium, alchoholic medicines or tinctures in large amounts. Nitrite of amyl and many others should be subjected to the same care.

From the fact that long, protracted diseases, especially if febrile in nature, tend to deteriorate the blood globules as oxygen carriers, and thus prove hazardous to the life of the foetus, it would be judicious, during such attacks, to use as preventive and corrective remedies potassic chlorate, hydrogen peroxide and provide an allowance of fresh air in more abundance. If depletion by bleeding is demanded, it should never be carried so far as to produce syncope, for fear of embarassing the fœtal heart. If emetics are indicated, the milder ones are preferable, to the exclusion of others of more violent or perturbating class. Cathartics require more than ordinary caution in their selection, for anything like a drastic effect that tends in the least to produce tenesmic action is certainly apt to initiate uterine contraction. Aloes and podophyllum are of this class, and mercury, when acting under its constitutional effect. Calomel, given as a cathartic only, rhubarb, magnesia and soda phosphates, potassa bi-tartrate and fl. ext. hyoscyamus are not so objectionable. The terebenthinate diuretics, juniper, savin, cantharides and some others, in addition to causing an increased excretion of urine, very strongly stimulate the mucous lin- of the whole urinary apparatus, creating an irritation that is liable to be propagated to the uterus, hence should be avoided.

Almost all the alkaline diuretics, with spts. nitri dulce, and some preparation of the watermelon—the active principle of which I trust some chemist will soon isolate for our use—is preferable. Digitalis is objectionable for reasons given above. To quinia sulph., in very large doses, I should object, as I believe it would tend to produce

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delirium, mania and other troubles in excitable nervous systems. To allay any symptom of commencing uterine contraction, opium in some form is undoubtedly the best and only reliable remedy we have; yet in the highly plethoric, suitable diuretic, diaphoretic and laxative agents should be combined. After the urgent symptoms have been relieved by this treatment, place the patient upon the daily use of fl. ext. viburnum prunifolium as a direct sedative to uterine muscular fiber, and continue several weeks. Iodoform, per rectum or vaginam, is an indirect uterine sedative.

For congestive headaches, I have a good word to say for phenacetine and salol, separately or combined, in from three to five-grain doses.

To correct the acidity of the stomach, from which most women suffer during the latter part of gestation, I have recommended soda carbonate grs. (10) in capsule, with each meal.

To correct the general excessive nervousness of the whole stage of gestation, nothing is better than sun-light, out-door air and some useful occupation, both mental and physical. Idleness and inactivity are detrimental, though excesive physical fatigue and mental worry should be avoided.

As the gravida approaches the puerperal state, especially if she is a primipara, she should be informed in a general way that labor is approaching, and initiated in what it consists. This is due her as a means to enable her to be more tranquil at a time which will tax her credulity and hopefulness most severely. She should be informed that, while probably seventy per cent. of all labors terminate happily, yet any stage of labor may, as far as can be told, be progressing naturally, and yet may change in a short time so that nothing but the most skillful management can prevent disaster to both mother and child. As such changes

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are many times too sudden to admit of calling skilled assistance, none other should be in attendance.

A large, well-lighted and easily-ventilated room should be chosen for the patient, if it has to be the parlor. It should by no means be the little bed-room. Labor to impress patient, nurse, husband, mother-in-law and all with whom the patient is surrounded that there is absolutely no danger in admitting fresh air and plenty of it. The condition called "cold," that is so often ascribed to fresh air, is oftener due to the modes of infection mentioned before.

It is not my intention to speak of complications requiring anaesthetics, instruments or mechanical interference, but only of those means that will prevent disease during the puerperal state, as far as lies in our province. The most scrupulous cleanliness should be observed in all that pertains to the person and bed of the patient, and the fingers and hands of the physician should be cleansed from every possible source of infection.

The saturating of the bedding is always a cause of apprehension that the nurse might neglect to remove it; hence a rubber sheet, pitch-paper or some water-proof material should be placed on the mattress *underneath* sufficient padding to absorb all discharges, which padding should be removed to our certain knowledge before we leave the patient to her nurse or others.

As soon as possible, to insure tonic contraction of the uterus and prevent after-pains, or, more properly speaking, the condition which causes them, I would give arom. sulph. acid and fl. ext. ergot. I have never regretted following this procedure; I have regretted not doing so, but my time is too short to give my reasons.

As soon as the foetus is expelled, the condition of the uterus in relation to the placenta should be ascertained. If it is not firmly contracted, with or without the placenta, there is no better method of procedure than that of grasping

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and kneading it, to cause its contraction. This insured, then tie and sever the cord. The placenta should be *immediately* removed from the vagina as soon as it is expelled from the womb. Its detention there is a cause of sub-involution of the vagina, a fruitful cause of after-prolapsus of all degrees, as well as recto- and vesico-cele. The placenta should be removed from the uterus as soon as its detachment can be determined. A temporary binder should now be applied to the abdomen to supplement the pressure to which the abdominal blood-vessels have been accustomed. I agree with the modern fashionable craze for reform of the corset and the adoption of the divided skirt of Madame Jenness Miller, and I would like to see fashion's finger of scorn point at the physician who allows his patient to go with a large, pendulous abdomen unsupported.

All soiled clothing should be removed at once, and the patient made dry for her temporary rest. This period of rest must vary with the condition of the patient. Then, if necessary, an entire change of clothing must be made, with care to scrupulous neatness—the permanent binder applied with a T to hold the absorbent pads against the vulva. I insist on this, because I want to insure freedom of movement for the patient and prevent soiling the bed with the lochia. A favorite custom of mine is to pass a large bed-pan under the hips and lightly syringe the vagina and thoroughly irrigate the bruised and swollen vulva, adjust the pads and put the child to the breast before leaving her to the care of her nurse.

Suitable doses of ergot, to which digitalis may be added, should be given at intervals until we are sure the process of involution is established. The latter will assist the former in maintaining vascular tonus and prevent absorption and promote elimination, and together will usually prevent after-pains, though occasionally opiates must be added.

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If the bowels have moved well immediately before or during labor, no attention is needed until the third day. If no opiates have been used thus far, an injection of a pint of warm water, to which an ounce of glycerine has been added, will be sufficient, and is preferable to any other method.

The vagina should be washed out on the second and each day thereafter as long as the lochia continue. A copious douche of warm water alone is the desirable procedure. Any safe disinfectant may be added. Do not allow some ignorant person to inject either air or water into the uterus. See that the apparatus is of the proper kind, or use none at all.

We should not refer to the use of water by injection for the prevention of septicaemia without grateful remembrance of the immortal Harvey, who advised it during his useful life.

I wish to repeat that a copious vaginal douche should be given on the second day, because we have been taught that about the third day "milk fever" will occur. I do not believe there is any such a thing as milk fever, if the child properly draws the breast in the meantime. The blood retained in the uterus and vagina is in a state of decay about that time, and its absorption by abraded surfaces gives rise to a septic fever, more or less intense, of longer or shorter duration. The vaginal irrigation preceding this period is the safe and wise method.

Those cases of septicaemia supervening as late as the second week, I think arise from infection created by thrombi in process of absorption. The physician should know whether the temperature is increased on the third or fourth day. Increased temperature is a pathognomic symptom of septicaemia.

It is not necessary to confine the puerpera to her bed longer than five or six days. Frequent change from bed to

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couch and chair, with frequent change when lying from back to side and face, are much more conducive to regularity in involution than to lie prone for a fortnight. She should be quiet, observe strict cleanliness, be kept from worry and care until involution is complete and all lacerations healed.

The obstetrician should determine these facts before dismissing his case. When he shall fulfill more thoroughly these duties of his laborious but honorable profession, there will be less complaint on the part of the gynecologist of the results of inefficient and meddlesome midwifery.

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REPORT OF THE COMMITTEE ON GYNECOLOGY.

L. A. MALONE, M. D., JACKSONVILLE, CHAIRMAN.

As Chairman of the Committee on Gynecology, I will occupy your attention but a short time, endeavoring to faithfully report a part, only, of the work done in the past year in this department of medicine, offering occasionally a few criticisms, hoping to call out discussion upon some vital subjects in the present system of Gynecology.

For much of the material of this paper, I am indebted chiefly to *The American Journal of Obstetrics*, *The Medical Record*, and *The Annual of Universal Medical Sciences*.

To begin to give a *resume* of the work done in Gynecology as offered through the medium of medical societies, ournals, monographs, etc., would be too gigantic an undertaking for such a paper as this. Dr. Skene, of Brooklyn, is reported to estimate the number of articles which appear upon this subject, at eighteen per week.

The present profuseness of medical literature on all subjects pertaining to our profession, makes it possible for the doctor in the most rural districts to keep abreast with the times. Therefore, it seems that the function of the committees as laid down in the constitution is destroyed and new duties should be imposed. This has practically been done by some of your chairmen during the past few years.

Of recent years, and with no apparent abatement during the past year, there has been great activity and zeal shown in the surgery of Gynecology, largely to the exclusion

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of other means, both constitutional and local. Some members of the profession seem to be vieing with one another to see which can report the largest number of cases operated upon, rather than to report the excellence of the work done and the suffering and death saved poor woman. This fact leads one to wonder if woman's condition has been made any more tolerable by the great advances made in aseptic surgery, than was the condition of the women of old, who suffered so much at the hands of many physicians; also whether plastic surgery, with general and local medication, pessaries. hot water, tampons and iodine, did not leave the majority of patients in a better physical condition than has so much destructive surgery.

To seek an answer to these inquiries, we are forced to appeal to statistics; and statistics, excepting from the pens of a few, are such will o' the wisps, that we are led into the quagmire of failure and disappointment. Perhaps there are present some gentlemen who have had experience in compiling statistics on various medical subjects who can tell us how to get at the truth from reports.

There are comparatively few men who have the moral courage to come before their professional brethren and confess their failures so readily as their successes. So many cases are reported from one to ten days after the operation and then the result, which is so important for the sake of truth, is rarely published.,

I knew one operator who was reported to have had fourteen fatal ovarian operations before a single successful operation, and not one of these fatal cases was reported to swell the mortal statistics. Personally, I know of several similar cases, where various surgical operations have been performed with the most unfortunate results. Each of you gentlemen can recall similar cases, so that could the whole number operated upon, and completed reports be given, the results would be radically different. Operations re-

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ported comparatively harmless would be found fraught with great danger and disastrous results, excepting in the hands of a few masters of detail and dexterity.

DISORDERS OF MENSTRUATION—STERILITY.

There seem to be several antagonistic views regarding the physiological function of menstruation. One, that menstruation and ovulation are physiologically dependent. This seems the prevailing opinion of most writers on this subject. Lawson Tait, however, believes there is no connection between the two processes. One gentleman in Kentucky has discovered that menstruation is due to a controlling center located in the spinal cord in the lumbar region; that the nerve from this center to the uterus enters the organ through the broad ligaments near the uterine body; that in the removal of the tubes and ovaries, if this nerve is severed, the function ceases.

In regard to sterility, Lemiere believes that the woman who has never menstruated, but who has menstrual molimena, may have some hope of conception. But if she has had no molimena, she will most certainly never concieve. Two unique cases of vicarious menstruation have been reported during the year, one by Butler and a second by Rein. In the first case there was a vesicular, purpuric eruption on the arms and shoulders, which bled freely and which appeared for five to seven days at monthly intervals during the suppression of menstruation. The other bled from a scar of a laparotomy wound during the normal menstrual flow. A cyst of the right ovary had been removed and it was thought a portion of the tube was included in the abdominal wound.

Currier calls the attention in *The Medical News* to the influence of obesity in young women in inducing scant menstruation. Gehrung, in *The American Journal of Obstetrics*,

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reports gratifying results in artificial suppression of the menses in chlorosis, by means of antiseptic tamponade. In the treatment of amenorrhoea the following drugs have been highly recommended: Potasii permanganas, manganesii binoxide, santonine in ten-grain doses at night, especially in chlorotic patients. In a few cases I have found the Faradic current a benefit. In anæmic patients, general tonic medication is of importance, even before special medication is resorted to. In menorrhagia and metrorrhagia, hydrastis canedensis, fluid extract, in fifteen to twenty drops, or the muriate of mydrastia, in one-tenth to one-grain doses, three or four times daily, has been of benefit. Strophanthus has been recommended highly by Poulet in the metrorrhagia of the climacteric and of very fat women during the child-bearing period.

Munde has employed, with satisfactory results, fluid extract of gossipium and ergot, equal parts, a teaspoonful every two or three hours; but thinks the curette and introuterine tampon should be used in conditions associated with hyperplastic endo-metritis.

In the treatment of dysmenorrhoea, most happy results have been gained by the use of the steel dilator, dilating the cervix from three-fourths to one and one-fourth inches, antiseptic precautions having been taken.

William Goodell has employed this treatment in three hundred and twenty-two cases without any serious mishaps and almost invariable and permanent relief. I have dilated the cervix for dysmenorrhoea thirteen times with satisfactory results in all cases but two. One dilation was all that was done in any of the cases. If followed up, I believe the other cases would have been helped. One case upon whom I operated suffered not only from dysmenorrhoea, but also from dysperunia. The menstruation immediately following dilation was quite as severe as the previous ones. She left me and consulted a specialist in Chicago, who recom-

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mended oöphorectomy. This she declined, and discouraged, returned to her home in Texas. Two years after she writes me that after the second menstruation following the operation she suffered no pain, and what was most gratifying, the dysperunia had also disappeared. The patient had been a sufferer for twenty years.

Cheron and Reverdin speak enthusiastically of the use of the dilator during irrigation with hot water. For this, they use a hollow-bladed dilator made for the purpose, through which passes a current of hot water. They claim that dilation by this method is both rapid and painless. Other writers prefer the use of the tent still. Fry reports excellent results from the use of electricity, the negative pole being placed over the sacrum. The size of the bougie is increased daily. Weak currents are all that are needed, four to six cells of an ordinary bichromate or Le Clanche cells being used. Martin, of Chicago, also reports excellent results from electrolysis.

The use of opium, chloral or alcohol is always objectionable, because their repetition is dangerous, tending to the formation of pernicious habits. The bromides in ovarian cases, nitro-glycerine and nitrate of amyl are excellent to relieve the spasm. Attention to the functions of the skin, liver and bowels should be given as preventive measures. Antipyrin in 15-grain doses, or acetanilid in 5-grain doses, repeated every two or three hours, have proven of benefit at time of paroxysms. Oxalate of cerium in 6-grain doses every hour has been recommended by Chambers as a specific. As might have been expected, hypnotism has been successful in some cases.

METRITIS—PARA- AND PERI-.

That acute metritis may occur in a virgin has gained credence in some quarters. That its occurrence is the signal for suspicion is the physician's safeguard.

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In the treatment of para and peri metritis, hot water, with rectal suppositories containing hyoscyannus and opium to allay the pain, has given me satisfaction thus far. Wylie believes that the so-called pelvic cellulitis is nothing more or less than inflammation of the broad ligaments.

In regard to the treatment of pelvic abscess, Hunter said, in view of the difficulties often surrounding the diagnosis in these cases: "The surgical maxim, that pus, wherever it exists, should be evacuated, does not invariably apply to cases of pelvic abscess; sometimes the danger of surgery is greater than the danger of waiting. There is no class of cases in which good judgment is so imperatively required. The cases should be carefully watched, as they often undergo rather sudden changes. * * * * When evacuation is decided upon, vaginal incision is usually the best." However, the greater number will evacuate themselves without surgical interference, usually through the rectum. In the treatment of acute peritonitis, there is a growing sentiment in favor of laparotomy, especially if there is reason to suspect the trouble is septic and purulent. To prevent the coils of the intestines from becoming matted together, continuous irrigation has been practiced.

Laparotomy has been performed in tubercular peritonitis with fortunate results. Munde is of the opinion that the success lies in the free evacuation of the fluid, rather than the mode of operation.

NEUROSES.

Grace Peckham, in the *Medical Record*, from a study of 2,000 gynæcological cases, of which 517 manifested nervous symptoms, comes to the following conclusions: "Nervous disturbance outside the pelvis is not nearly so frequent in diseases of the uterus and its appendages as is generally believed. The amount of disturbance is in every way proportioned to the amount of uterine tissue involved and the

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length of time the disease has continued. Reflex nervous symptoms are no more severe or extensive, that arise from displacements and inflammatory conditions of the uterus and its appendages, than would be produced by pathological condition of the same extent and chronic character in other parts of the body. When present, they are usually the result of a previously inherited or acquired neurotic tendency. Eye trouble attributed to uterine neurosis is generally due to anæmia and general asthenia. Many nervous symptoms are due to the constipation and anæmia with which uterine disease is so often accompanied. Nervous disturbances outside the pelvis are more prevalent among highly organized women of the higher classes than among the lower. Sacral neuralgias may often simulate uterine disease.

ANTE- AND RETRO-DISPLACEMENTS.

Anteversion is not pathological unless occasioning symptoms. Kellogg has shortened the round ligaments to correct this position. However, less attention is being given to ante-displacements than formerly.

Retroversion has and always will attract considerable attention. Some writers assert that without disease of the tubes or ovaries, or both, no symptoms are produced. But the opinion of the majority of the profession favors efforts at correction of this mal-position. Alexander's operation has been performed a large number of times and is increasing in frequency, but with various modifications. It is considered important, however, to perform some plastic operation upon the vagina, having in view the lessening of its antero posterior diameter. It seems, even now, too soon to judge of the true merit of the operation. Yet it has come to stay, no doubt. In the reported cases, one is struck by the frequency with which the operation has been performed upon young single women.

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HYSTERORRAPHY.

Ventral fixation has been practiced both in Europe and America, but more frequently on the continent of Europe. Sanger stitches the cornua uteri to the anterior abdominal walls. The technique of the operation is as follows:

"Laparotomy.—A silk worm-gut suture should be passed through or around the round ligaments at their uterine insertion on either side, and through the peritoneal coat of the bladder at the point on which the uterus naturally rests, and tied. If care be taken not to grasp the bladder too much from the sides, there need be no fear of tormina, as the bladder fills. This simple suture is not any more likely to prove a source of irritation to the bladder than sutures passed after its rupture. The relation of uterine and vesical surfaces thus affected is intimate, and exactly imitates the natural position of the uterus."

Wylie shortens the round ligament by passing three strong sutures around the fold of the ligament, freshening the opposed surfaces before suturing.

Shucking has devised a means for the radical cure of the retroflexed and prolapsed uterus, in which a needle is passed through the anterior uterine wall and anterior fornix from the interior of the uterus, and thus stitched to the anterior vaginal wall. But the pessary, Faradism and other conservative measures have not as yet been laid aside.

CERVICAL LACERATIONS.

The operation for the restoration of the cervix, strictly an American operation, has not been so well received abroad as yet, as in this country. Noeggerath's conclusions to the effect that "cervical tears have no influence on the development of uterine diseases; they increase the liability to conception, and diminish the chances of miscarriage" and that "Emmet's operation is never indicated and can have no

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influence on the condition of the uterus," seem to have been revived by that gynæcological giant, Lawson Tait, when he asserts lately that Emmet's operation is worse than useless, and that he can accomplish as much with 5 grains potass. chlor. given three times a day as Emmet does with his scissors. But no one who has performed the operation in appropriate cases will deny the indications for the operation are pronounced, and that relief is certain in the majority of the cases. Elastic or metallic clamps have been offered as a substitute for the silver wire suture to hold the freshened edges together, thus so simplifying the operation that an anæsthetic is not needed. Such measures are calculated to bring discredit upon the operation. The "cicitricial plug" is not always a fancy, but must be removed if the operation is successful. Involution is soon excited by the operation. Hardon reported nine cases, and Hawkins two, where super-involution followed trachelorrhaphy. Two fatal cases have been reported during the year from septic peritonitis.

UTERINE FIBROIDS.

The proper disposition of the stump is the bone of contention between those who employ surgical treatment for uterine fibroids, whether extra or intra peritoneal. In England and America, the extra peritoneal method is employed; on the Continent, the intra peritoneal method. But Apostoli and his followers are applying high currents of electricity with happy results. I have treated two cases of uterine fibroid satisfactorily by electricity. In one case the abdominal measurements were reduced from forty-four inches to thirty-six inches in less than three months, the patient coming from a neighboring town only once a week. Martin's abdominal electrode, with modifications, seems to be the most frequently used.

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CANCER OF THE UTERUS.

The battle between friends of the high amputation operation and vaginal hysterectomy, seems to have turned to the favor of the friends of the latter operation. But the statistics, as yet, of the operation are not accurate, so to put the mortality as low as the ten per centum, as some have done, is hardly justifiable.

Dr. A. Reeves Jackson, at the International Medical Congress in Washington, gave statistics which show much in favor of high amputation. But the majority of the writers prefer vaginal hysterectomy. Although the technique of vaginal hysterectomy has been greatly improved, yet it is hardly safe to outline the operation as so simple. Dr. E. E. Montgomery gives the following conclusions regarding the operation: 1. "That in all cases of cancer confined to the uterus, whether of the body or cervix, vaginal hysterectomy is the only justifiable operation." 2. "The operation, when performed under proper precautions, is not necessarily attended with greater mortality than ovariotomy, and should be urgently advised." 3. "The operation should be performed as early as the diagnosis can be determined, and when the condition is one of doubt, the patient should be given the benefit of it and the organ removed." 4. "The control of hemorrhage by pressure, forceps or clamps, and the open treatment of the wound, are the choice of procedures."

TUBES AND OVARIES.

Abdominal surgery has been in the past few years a fertile field for operation. The sacred precincts of the peritoneal cavity, which but a few years ago none but the boldest dared to enter, has now become the fit arena for even novices to operate. Since Lawson Tait electrified the world by his wonderful successes, emulators have become

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numerous everywhere. There is scarcely a hamlet in the United States to-day where may not be found at least one who has opened a woman's belly, and erected a tomb-stone to the memory of his daring. All sorts of mental disturbances and neuralgias have been made a pretext for the operation. I have seen apparently normal ovaries offered as a justification for their removal, the patient being a hystero-epileptic.

Dr. Parvin said, at a meeting of the Philadelphia Medical Society: "I have seen a woman whose ovaries were removed on account of pain, and suffering returned as severely as ever; and then the stump of each pedicle was taken away, but not the slightest benefit followed. A year after the operation she was as bad as before the first." One gentleman has claimed that as many as ten per cent. become melancholic and suffer from nervous disorders after removal of the ovaries. Dr. Gill Wyley says that the most satisfactory cases he met with were those operated upon years ago. It was his practice to perform laparotomy when there was present any *real* disease of the ovaries and tubes which could be clearly made out by physical exploration, and not merely hysterical and other nervous symptoms.

Apostoli says, "Castration, which irretrievably mutilates a woman, both physically and morally, which kills them sometimes, and which only cures definitely and permanently in about one-fourth or one-fifth of the cases, ought to be an operation of necessity, never of choice, and considered as the last resource of therapuetics for the uterine appendages." During the past year the reading medical world was startled by the report of one hundred abdominal operations by one man in a little town in West Virginia. Many adverse criticisms were offered by leading editorials. Why? Simply because the surgeon lived in a small community. Yet he did only what hundreds of others are doing in our large cities, operated when he had an opportunity.

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Every journal which comes to the doctor's office is filled with reports of successful operations for the removal of tubes and ovaries, until your rural gynecologist believes the tehcnique is so perfect, the operation so simple, that he, *too*, must succeed. Even the secular press has been brought into service to publish these wonderful operations, until poor invalid women have, many of them,come to think their only hope of recovery, no matter what their true ailment, lies in their mutilation. But other hopes are excited in their minds than relief from real pain. But the other day I received a visit from a girl eighteen years of age, who requested that I remove her ovaries, because she suffered from excessive sexual desires, threatening, if I did not, she would go to Chicago to Dr. ————, who would do it for her, for he had peformed a similar operation upon a friend of hers. Of course, no honorable physician would so prostitute his surgery.

During the past year a strong wave of conservatism has swept over our land. The voices of many eminent gynecologists has been raised against this prostitution of our noble art to personal aggrandizement and financial gain, as well as to satisfy alonging to do something great, startling and strange in surgery. Even the New York Obstetrical Society, which has set its seal of approval upon more peculiar and unnecessary mutilations of women than any other similar organization in America, at a stated meeting, November 19th, 1889, had a lucid interval, in which a halt was called and word-wrangling for conservative priority was indulged in among the members. This same spirit invaded the sactum of many leading journals and brought forth a number of critical editorials. But sufficient adverse criticism has not yet been given. I believe that the freedom with which the tubes and ovaries have been removed in the past few years should receive a strong and decided rebuke

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from the medical world as a body, and that specialists should not sanction this wholesale slaughter of the innocent.

Diseased tubes and ovaries must, and always will be removed when the symptoms are grave enough to justify the risk to life. But to remove the uterine appendages for dysmenorrhoea, uterine hemorrhage, mental disease, painful neuralgias, etc., is unscientific and unjustifiable. The course adopted to secure the operation, is often unprofessional. The operation is frequently made to appear a trifling thing, the benefits immense. The great danger to life, the uncertainty of a cure, the possibilities of abdominal abscess, of a tender and oftimes painful cicatrix, of ventral hernia, of chronic invalidism worse than that which they seek to escape, the unsexing, the impossibility of procreation, are all unmentioned. To illustrate: A former patient of mine fell into the hands of a gynecologist who, during the past two or three years, has been crowding reports of a large number of laparotomies and Alexander's operation upon the profession. At the first examination he told her that shortening of the round ligament was necessary for her recovery. But the next examination revealed a direful state of affairs. The broad ligaments were affected, the patient stood over an active volcano, which was liable at any moment to erupt and take her life. But, "if the ovaries were removed, her recovery would be rapid and certain." Consent to the removal of the uterine appendages being refused, the surgeon contented himself with another Alexander's operation. Comment is unnecessary. The patient did suffer with slight prolapse with retoversion, a very fit case for the operation performed, as there were no adhesions, but at the same time she was exceedingly hysterical.

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CONSTIPATION AND ITS RELATION TO PELVIC DISEASE IN YOUNG WOMEN.

ELIZA H. ROOT, M. D., CHICAGO.

Constipation, long continued, gives rise to a train of symptoms that present themselves for relief in the daily practice of every active physician. Nor does he find any one cause of ill health so difficult to remove.

The habit is generally well established before he sees the patient, and she comes for the relief of resulting conditions and symptoms.

The habit of continued and obstinate constipation is largely the result of a careless disregard of physiological functions, and is entirely lost sight of by the patient as a possible cause of ill health and physical discomfort. It begins, too frequently, in childhood, continuing into womanhood and accompanying its victims to the grave.

Many of the symptoms point to pelvic disease; pain in the back, pain in the top and back of the head, a feeling of weight in the limbs, dysmenorrhea and leucorrhœa, subjecting the young patient to local treatment, when changed modes of dress and life, with the relief of constipation, would restore health.

Still, it is very evident that constipation does act as a most active factor in the production of pelvic disease in women; for, where endocervicitis and even retroversion exist, rapid improvement is made as soon as constipation is relieved.

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The causes of constipation are varied and arise frequently in childhood from faulty diet, dress and neglect of elimination. Again, it occurs at the time of puberty, when the transition from girl to womanhood gives rise to faulty nutrition and consequent relaxation of all the body tissues. Tight clothing, with high-pressure modes of life, together with the neglect of daily retirement, will at this time of the young girl's life, establish the habit of constipation fatal to her future health and comfort.

Anemia, red, spongy gums, greasy and coarse skin, acne, offensive breath, chronic pharyngitis, naso-pharyngeal catarrhs and rheumatic pains co-exist singly or altogether with and as a result of constipation, and where they do so co-exist pelvic disorders are rarely absent in women who have reached the ages of between 21 and 30 years.

Pelvic disease results from constipation through pressure. The filled and distended sigmoid flexure and rectum press upon blood-vessels, nerves and muscles, exerting direct and reflex influences upon the functional activities of the whole economy. The sigmoid flexure lies frequently against the posterior surface of the broad ligament (Charpentier). The left ovary and broad ligament, with their nerves and blood-vessels, come more directly under the influence of mechanical disturbances, hence left ovarian tenderness and pain is more frequent than right. Pressure produces dysmenorrhea by increasing the normal congestion of menstruation to a pathological congestion and consequent hyperesthesia of the pelvic nerves, and by displacements. Such abnormal congestion is never wholly cleared away by the normal ebb and flow of the pelvic circulation, and disease of the endometrium, in part (endocervicitis) or complete (endometritis), is the result.

Constipation can aid the establishment of ovarian and uterine disease and displacements indirectly, through the malnutrition and consequent weakening of the tissues inci-

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dent to poor elimination of waste products. Once the uterine supports are weakened, the proper relations of the pelvic viscera are destroyed, and the weight and pressure of the intestinal loops, distended or empty, will serve to fix the displaced uterus and ovaries in their abnormal position. The uterus, having a marked faculty of reaction upon the cerebro-spinal system, a train of distressing symptoms arise, and when associated with artificial modes of life and surroundings, together with inherited strumous or neurotic tendencies, a crippled motherhood and physical ruin is certain.

The sigmoid flexure, with loops of small intestines, may give rise to confusion and even mistakesin the diagnosis of pelvic disease.

If we consider the development and adult anatomy of the intestine, we can not dismiss the idea that anomalies and displacements of its various sections may occur.

It is needless to speak here of the displacement downward of the transverse colon; still, we may state that when so displaced and loaded with fæces it may lead to a mistake in diagnosis.

But what I believe to be of more frequent occurrence is confusion arising from the sigmoid flexure. In making a vaginal examination it can be readily felt if behind the uterus, and when empty is more difficult to recognize than when filled.

Let us consider for a moment the anatomical relations and development of this section of the intestinal tract. "The sigmoid flexure of the colon, situated in the left iliac fossa, consists of a double bending of the intestine upon itself in the form of the letter S," or, as some anatomists state, the form of the Greek omega lying upon its side ς, "immediately before it becomes continuous with the rectum at the margin of the pelvis opposite to the left sacro-iliac articulation. It is attached by a distinct meso-colon to the

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iliac fossa, and is very movable, falling into the pelvis when the bladder is empty. It is placed immediately behind the anterior wall of the abdomen," and is separated from the uterus by some convolutions of the small intestine. In normal conditions and relations the sigmoid flexure may be above the uterus. But normal conditions have no need for medical investigation, and only the abnormal present themselves.

Of the development of the sigmoid flexure we learn that "the large intestine of the foetus at birth is comparatively longer than that of the adult. In the infant it is always nearly three times the length of the entire body; in the adult it is but twice the length of the body;" and "as the colon ascendens is very short, and the transversum is not long, the principal part of the excessive length falls upon the sigmoid flexure," with a length varying from 8 to 30 ctms. (Jacobi.) This length gives rise to several convolutions instead of the simple sigmoid flexure. Its position also varies from left to right. One author says: In one case in six it is on the right side. Another states that in 4 per cent. of the cases examined it was more in the median line and more to the left than the right side, and Jacobi says his own experience has taught him to look on the right side of infants for the flexure.

You ask, What has this to do with adult conditions? It may have much to do with them. With the wide variances in length and position in infancy it seems more than reasonable to assume that corresponding variances exist in adults.

Post-mortems reveal a sufficient number of such variations to make it more than probable that they exist to a considerable extent. Constipation will aid this flexure, if in a perfectly normal condition as to length and position, to seek the pelvic cavity. Constant constipation will not only

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dilate the viscus, but it will drag it down, stretching its meso-colon.

The laxness of fiber, so often found in women suffering from pelvic inflammations and constipation, is an additional factor in the prolapsing. It may fall behind the uterus, and when a variation as to length and position is present, it will be felt at the median line or in the right side. The examining finger coming in contact with it in these positions, is ready to assume the presence of serious disease products. It may fall in front of the uterus, with other loops of small intestine, and hold the retroverted uterus securely in the hollow of the sacrum by means of its superincumbent weight.

Adhesions are frequently diagnosticated, and laparotomy, when made, proves their non-existence. The exploring finger of the operator having in all probability disturbed the relations of the dependent loops, and they are lost sight of as the cause of the mistake. When there is any resistance felt to the upward and forward movement of the retroverted uterus, the probable presence of superincumbent loops of intestine should not be lost sight of, and the operation should be done only in the knee-chest or Sims' position. To do otherwise is to render the operation painful and hazardous, and always unsuccessful, for the uterus, on removal of the force, falls immediately back into its old position.

Case 1. A young woman, single, aged 23, came to me for the relief of dysmenorrhea. Constipation had existed for years; fibers lax; anæmic and greatly debilitated. On examination I found tenderness of the uterus and tenderness throughout the pelvis. The uterus was displaced slightly backward and quite strongly prolapsed. Behind the uterus, extending well to the right side, I found a large, irregular, nodulated hard mass, nearly filling the pelvis. Pressure upon it caused pain, and feeling it through the intervening tissues it gave to the examining finger a rather startling impression; but following the mass toward the left, I was

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led to pass the finger over the rectum, in which I found two or three nodes, hard and free from surrounding infiltrations. I concluded I had a case of elongated and dilated sigmoid flexure filled with hardened excreta.

I ceased further manipulation and directed the patient to take a compound cathartic pill, and to aid its action, the following morning with an enema, and then to come again. On a second examination I found the post uterine tumor(?) gone, tenderness abated and the uterus in a nearly normal position. The menstrual pain was variable in severity and duration, and I inferred that the pain arose from pressure and pelvic congestion induced by obstruction of the pelvic circulation.

Case 2. A young woman aged 21, single, blonde, of pale, waxy complexion; menstruation painful and often accompanied by hysterical attacks. She suffered from indigestion, and a persistent cough had lead her friends to fear phthisis. The treatment she received, though of the best, did not stop the cough, and she remained pale and weak; and as the condition of the lungs did not warrant the idea of established phthisis, she was sent to me for a pelvic examination.

I found a retroverted uterus, endocervicitis erosion of the cervex and a prolapsed ovary. The displacement was not reducable, and seemed fixed in the hollow of the sacrum. Placing the patient in Sims' position, then to the knee-chest position, I found the uterus free.

At a subsequent examination I found an enlargement behind and above the uterus that I had not found at any previous visit. Its presence gave me some uneasiness, as constipation was not complained of at this time, nor did the enlargement have the appearance of being a distended loop of the bowel. While trying to move the uterus forward, it suddenly was set free with a gurgling sound and sensation, felt by the patient as well as by myself. The uterus as-

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sumed the normal position, the enlargement had disappeared and I felt satisfied of its character.

Menstrual pain was also variable in this case. I advised the patient to take an enema or a seidlitz powder just before the onset of the flow, and to resort to the knee-chest position several times a day during the first of the flow, and was rewarded by marked relief in suffering. Under general and local treatment the anæmia disappeared with the endocervicitis. There was no more cough, and the stomach consented to perform its functions.

Case 3, demonstrates the confusion an anomalous sigmoid curve can give rise to. This patient was brought to the Hospital for Women and Children for care by Dr. Addison H. Foster. Dr. William E. Clarke saw the case with him. No one knowing these gentlemen will for a moment question their ability to make a diagnosis.

Pelvic suppurative inflammation, with abdominal peritonitis, was certain.

A rounded tumor was felt in the vagina to the right side; while just above Pouport's ligament, external manipulation revealed, on the right side, a tumor. It could not be determined if that felt in the vagina was continuous with and a part of the one felt externally. The bowels moved every day, the evacuation being normal in amount and consistency. The patient died, and a post-mortem cleared up all doubt as to the character of the tumor felt by external palpation. It was the superior curve of the sigmoid flexure. The intestine extended from left to right almost transversely, filled to distension throughout its length. The right extremity lay behind the anterior wall of the abdomen; hence the tumor. It could not be followed by the external manipulation, as its middle portion was covered with loops of small intestine and omentum, firmly bound by adhesions. The lower curve sunk more into the pelvis and was lost in a mass of adhesions and pus cavities.

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The patient had been constipated during the greater part of life, but at the time of entering the hospital was apparently free from it, which led still more to the confusion.

This matter of constipation does not receive the attention it should. Its prevention in children should be the concern of mother and teacher, and that from an intelligent comprehension of the physiological functions of the body; and where neglect and ignorance exists, the patient's attention should be arrested by the counsel and advice of the physician.

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REPORT OF THE COMMITTEE ON DRUGS AND MEDICINES.

JOHN A. ROBISON, A. M., M. D., CHICAGO, CHAIRMAN.

The Treatment of Phthisis Pulmonalis.

It has been the almost annual custom of the Chairman of the Committee on Drugs and Medicines to give a resume of the current literature upon new discoveries in materia medica and therapeutics, but your Chairman this year ventures to depart from the usual routine to present an outline paper on the treatment of a special disease. The important discovery of the cause of tuberculosis, the numerous endeavors to find a specific cure, and the failure of many vaunted cures, and the alarming fatality of the disease justifies us in attempting to erect a frame-work of treatment, on which we can each build a therapeusis according to the material, the resources and the individual tastes at our command.

Your speaker's idea is that the therapeusis in each case must be planned according to the patient, his social relations, his environments, his wealth, and the judgment of his physician. But there are special lines of conduct that we may systematically study; therefore, we present for your consideration the following outlines of treatment of phthisis pulmonalis:

1. The hygienic treatment. 2. The climatic treatment. 3. The medicinal treatment. 4. The dietetic treatment. 5. The surgical treatment.

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THE HYGIENIC TREATMENT OF PHTHISIS PULMONALIS.

Two objects are to be gained in the hygienic management of patients predisposed to, or affected by, tuberculosis; first, its prevention; second, its cure. And foremost among the means to prevent consumption is the popular dissemination of knowledge among the laity as to the cause of phthisis and the conditions that promote its development. While it is probable that the disease is sometimes directly transmitted by heredity, this has not yet been unequivocally proven. Therefore, we may argue that where a man and woman marry, both of whom are in delicate health, their offspring will offer the least resistance to the ravages of the bacilli tuberculosis that may find entrance to the body by the inspired air or contaminated food. But it is a matter of clinical observation that if one branch of a family is of robust constitution, free from any hereditary vice, the succeeding generations may be free from any tubercular disease.

But granted that there is present in any family a trace of tubercular disease, then the hygienic treatment for the prevention of phthisis pulmonalis should commence in infancy. The food should be such as is most easily digestible and nourishing, the child should be taught to eat freely and relish fatty and leguminous foods. And as the child grows older it should be properly and warmly clothed, should live almost continually in the open air, and should be allowed to enjoy the out-door sports. Its school hours should be short, and the intellectual education should be subordinate to the physical. Girls, especially, should not be allowed to become young ladies before their time, and be permitted to wear corsets, eat late suppers, go to balls, or ape their fashionable mammas. Such sports as playing ball, lawn-tennis, archery, swimming, boating, horseback riding &c., should be indulged in by girls as well as boys. A residence in the country is preferable to that in the city. And as the age of majority approaches, the

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selection of the life occupation should receive serious consideration. The occupation should not be too confining, in close, unhygienic quarters, nor taxing too severely either the body or the mind.

In case phthisis pulmonalis already exists, then the question arises, What means must be employed to arrest the progress of the disease? In my experience, in the treatment of consumptives, I would tabulate the following hygienic means:

1. Respiration exercises, or deep breathing. Breathing pure air.
2. Gymnastic exercises.
3. Sufficient rest and sleep.
4. Daily baths.
5. Dressing properly.

In the use of deep breathing we may employ two methods: First, breathing exercises without mechanical aids. Second, these exercises with mechanical aids to expand the chest.

The first method consists in the patient lying flat upon the back, without the head elevated, and inspiring through the nose. It should be the aim to put into action the abdominal muscles and the diaphragm. Let the lungs be gently, but fully, filled with air, retaining it for a moment, and then expiring it suddenly and forcibly. As the patient becomes more expert, let him increase the frequency of the deep respirations until he takes ten to twenty per minute. These exercises should be indulged in twice or thrice daily. And the patient can lengthen the time of exercising until they occupy an hour each time. My experience in the treatment of phthisis pulmonalis by the inhalation of superheated air led me to believe that the beneficial effects sometimes derived were from the forced respiration that attended the inhalations.

The second method of deepened inspiration is by co-op-

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eration with weights and pulleys. By this method it is possible to considerably expand the chest, and increase the breathing capacity of the patient. There are three exercises that are very beneficial. Exercise first consists in the patient standing upright with the hands above the head, grasping the pulley-weights, and slowly bringing the arms down laterally to the sides of the thighs, at the same time filling the lungs by a gentle inspiration. The quickness of the movement ment may depend upon the condition and temperament of the patient. Expiration takes place at the close of the movement. This exercise brings into action and developes the front and back of the deltoid, pectoralis major, latissimus dorsi, teres major and serratus magnus.

Exercise second: The anteri-posterior diameter of the chest may be increased by the patient lying flat upon his back, thus dispensing with the action of the serratus magnus, and pulling the weights from above his head straight forward, without bending the elbows, until the hands reach the thighs. This exercises the biceps slightly, pectoralis major, lattissimus dorsi, deltoid, teres major, rhomboidii, and trapezius. The front of the upper arm, the belly, the front of the chest, side of the back, the shoulder, the back of armpit, and upper part of the back are all developed.

The third exercise is essentially the same as the first. It is for the patient to go through the same motions as the first while lying on his back. It is a good exercise for weak or tired patients.

A great number of variations of these exercises may be instituted, according to circumstances. Care must be taken that the exercises be gradually begun, so as to avoid fatigue or soreness of the muscles, especially in feeble patients.

These exercises are especially valuable in the treatment of cases of incipient phthisis. Many times there are evidences of slightly deposits in the apices, and the patients are those who, through carelessness, ignorance or habit, do not fully

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inflate the lungs. Hence, the air seldom enters the apices, and the lung tissue does not receive its full quota of air. It soon loses its elasticity, the arterial and nervous circulation become sluggish and the tubercular deposit is left the sole occupant of the field, and soon conquers it. By encouraging the patient to fully expand the lungs, fill the unused air vesicles with pure air, and thoroughly aerate the blood that passes through the neglected area, we do a great deal toward placing the tissues in a condition so that they can successfully resist the onset of the bacilli tuberculosis.

Pneumatic differentiation, in combination with these lung gymnastic exercises, often affects a great deal.

THE CLIMATIC TREATMENT.

It is not our purpose at this time to attempt to say the one hundredth part of what might be said on this subject. We believe the choice of a climate is sometimes a matter of minor importance, whereas physicians often consider it of prime importance, and, alas! how many hundreds of patients have been hurried to their death by being advised to go some place to receive the benefits of a climate, at the sacrifice of good living, home comforts, good nursing and cheerful companionships! No climate is a specific. In locating a consumptive patient we should endeavor to secure the following advantages:

1. The climate should be such as to insure pure, fresh air, free from dust or poisonous germs. Such air is more apt to be found at an elevation of over 1,000 feet above the sea level, or in mid-ocean.

2. There should be an equable temperature, neither too warm nor too cold, the air should be in continuous motion, and yet there should be few wind-storms.

3. There should be plenty of sunshine, and the scenery should be pleasant.

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4. The patient should be able to take almost daily out-door exercise, or be able to lie out-doors, if too feeble to exercise.

5. The health resort should be easily accessible, and home comforts, with congenial society, easily obtainable.

6. The practice of sending patients away indiscriminately is deplorable, and each case must be carefully studied, and the resort be chosen according to the individual temperament, stage of the disease, wealth and social habits of the patient.

I cannot better or more concisely tabulate the suitable cases to be sent to the different regions than to quote the following from Hale White's book on therapeutics:

CASES UNSUITABLE FOR HIGH ALTITUDES.

1. Those in whom there is considerable affection of the bronchial tubes, for the dryness of the climate increases the kind of bronchitis which usually accompanies phthisis.

2. Patients with much emphy sema or bronchi-ectasis, because of the probably diminished absorption of oxygen, and the difficulty of respiration experienced on first arriving.

3. Patients with diseases of the heart, must not go to a high altitude, because of its effect upon the pulse and respiration.

4. Cases liable to acute febrile attacks, whether or not these indicate an occasional increase of mischief in the lungs, should remain on a low level.

5. Patients who are very excitable, or suffer from insomnia, should not go, for high altitudes aggravate these symptoms. Women do not acclimatize so well as men.

6. Ulceration of the larnyx and intestines are both of them contra-indications.

7. Cases in which there are very extensive lesions, or which are very advanced, are unsuitable.

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8. Pneumonic phthisis, if at all acute, is made worse by a high altitude.

9. Patients who can not take exercise should not go.

10. The very old or very young had better be treated at home.

11. Patients who suffer from or develop albuminuria.

CONDITIONS THAT ARE NOT CONTRA-INDICATIONS, AS IS POPULARLY BELIEVED.

1. *Pulmonary Haemorrhage.* It is now known that this, so far from being a contra-indication to treatment by high altitudes, is actually relieved by it. The exact explanation can not be given.

Fever. If this is not excessive, and if it does not indicate any actual changes in the lungs, it is often improved.

Simple Diarrhoea and Simple Dyspepsia. These are both benefited.

Night Sweats. There is a common belief that these forbid this treatment; on the contrary, they often disappear on removal to a high altitude.

Cavities. This is not a contra-indication, unless a very large area of lung is destroyed.

A mountain climate is advisable in all cases where there is threatened phthisis, with a strong hereditary predisposition, or when there is poor thoracic development.

TREATMENT BY LOW LEVEL CLIMATES.

Two classes suitable for phthisis, the warm and moist, and the warm and dry.

The warm and moist climates, such as the sea-coast or sea-voyages, are most suitable for phthisical patients of an excitable and nervous type, or those suffering from insomnia or bronchitis.

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The warm and dry climates are best suited to sufferers from phthisis who have heart disease or albuminuria.

THE MEDICINAL TREATMENT OF PHTHISIS PULMONALIS.

Over-medication is one of the evils to be avoided in the treatment of consumption. It is a matter for wonderment that so many patients survive the wholesale administration of tonics, cough mixtures, anti-septics, villainous compounds of oil, etc. Too often the medicinal treatment of phthisis pulmonalis is routine. My plea is for less, but more scientific, medication. Let us differentiate the cases, and apply our remedies with definite objects in view. It is a sad fact, but nevertheless true, that we have not been able to obtain a specific for the cure of phthisis tuberculosis. You are all familiar with the vaunted specifics, viz: anti-septics, administered by the stomach, by inhalation and hypodermically, rectal enemas of gases, intra-tracheal injections of creosote, inhalations of super-heated air. All have proven of little or no avail; hence, it behooves us to hesitate a moment and ask, What are the medicaments that should be employed, and when?

For the sake of brevity, I would make the following list of medicines, with the indications for their employment:

1. *Tonics:* Iron, quinine, strychnine, arsenic, malt preparations, cod-liver oil, should all be used when the appetite flags, anaemia is present, or the nutrition fails. These preparations should be used as adjuncts to the other methods of treatment for placing the tissues of the patient in such a condition of health as will enable them to withstand the attacks of the infusoria that may be distributed throughout the body.

2. *Antipyretics:* It is my opinion that antipyretics should not be used, except when sponging and baths fail to lessen the fever. Then a continuously *high* temperature must be combatted by antipyretic drugs.

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3. *Astringents:* Diarrhoea and sweatings may be combatted by astringents, such as tannic acid preparations, acids, the mineral astringents and preparations of belladonna.

3. *Cough Medicines:* The simpler the medicines for alleviating the cough the better. The narcotic agents should not be used except in extreme cases. Opiates should be avoided as long as possible, but if failure attends the use of all other remedies, and the cough is so distressing as to disturb the patient's rest, then an opiate is justifiable.

4. *Stimulants, Alcoholic:* I am a firm believer in the beneficial effects of the judicious use of alcoholic stimulants. Where there are no contra-indications, undoubted good results follow the administration of alcoholics in such quantities as to equal from one to ten ounces of absolute alcohol in twenty-four hours for an adult. All excess is injurious. After the patient has taken alcoholics for some time, an increase in the daily amount will be allowable. Alcohol is antiseptic, antipyretic, and checks tissue waste. In Germany, it is the practice, in cases of laryngeal phthisis, to have the patient gargle frequently with whisky, as well as take it internally. In this manner the number of bacilli is decreased. But alcohol increases the bodily nutrition to such an extent that the patients' lives are often prolonged. I have now under treatment a patient, aet. 19, with tuberculous consolidation of the upper lobe of the right lung, who gained 26 pounds of flesh by taking whisky and cod-liver oil during four months.

THE DIETETIC MANAGEMENT OF PHTHISIS.

The manager of the cuisine holds the key to success in the benefiting of consumptives. The proper kind of diet, and the way to serve it, are questions of prime importance. The preventive treatment of consumption begins generations back. Oftentimes consumptives are suffering for the dietetic sins of their ancestors. Therefore, as physicians, we should instruct the families under our care to give to infants and

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children such food as will make healthy tissue. Fothergill pleasantly writes of the food that the children of phthisical parents should take—milk, crackers, oil, butter and sugar, and fatty food in general. As a prophylactic of phthisis, there is no doubt of the value of the proper diet in early life.

In the dietetic management of consumptive patients there are several facts that must be considered.

1. The food must be nicely prepared and daintily served.

2. The stomach and intestinal canal must be in the best possible condition for the digestion and absorption of food. In case of catarrhal disease of the stomach or intestines, the systematic drinking of hot water, half to one pint an hour before meals, or washing out the stomach, will often be beneficial.

3. The food must be varied, and to suit each individual case. The foods that are the most useful are the following, in the order of their relative merit: Animal food of the nitrogenous variety, especially beef, milk, eggs, mutton, poultry, fish, green vegetables. The farinaceous and starchy foods are of secondary importance. Butter should be used freely. Cream, with alcohol, is often of great service.

4. Food must be taken frequently. At least six times daily, at intervals of three or four hours, some portion of nutriment should be ingested.

I am giving my patients, as a guide, the following printed directions:

In your case, in order that your bodily nutrition may be improved as rapidly as possible, it is necessary that you should take food at least six times in the twenty-four hours; three full meals at intervals of six hours, with light lunches between. No more food should be taken at one time than can be comfortably digested in the time allowed.

Food should never be taken when you are suffering from

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bodily fatigue, mental worry or nervous excitement. Before the full meals you should rest in a recumbent position from twenty to thirty minutes, even if not sleeping.

As far as possible, each meal should consist of such articles as require about the same length of time for digestion; for example, first the starches, such as bread, potatoes, oatmeal, etc., with sugar; then the albuminous foods, such as meat, fish, butter, etc.

A very good plan to follow, when you can, is to regulate your daily diet according to the following menu:

On rising.—A tablespoonful of cream with a teaspoonful of brandy.

Breakfast.—Oatmeal or cracked-wheat porridge, with little sugar and cream; rare steak or loin chops, with fat; cream toast; a soft-boiled or dropped egg; a half-pint of milk; a small cup of coffee, if desired.

10 A. M.—A half-pint of milk, or a little beef soup, mutton broth, or koumyss.

Dinner.—Soup, bread, butter, roast beef, mutton, game, at times fish, with potatoes mashed with cream, or fried in bacon fat, and vegetables—except such as pickles, cucumbers, etc., that are indigestible—a half-pint of milk. Dessert: fruit and cream, ice cream, chocolate pudding, rice pudding, whipped cream and cream molds.

4 P. M.—A half-pint of milk, raw meat soup, with thin sliced stale bread, or koumyss.

Supper.—Toast and milk; cold meats with jellies, but sparingly; half-pint of milk, or thick meat soup; sliced stale bread; custard pudding or ice cream.

9 P. M.—Soup or milk, and if thirsty at night, cream with soda water, or koumyss.

If cod-liver oil is prescribed it should be taken one hour after each full meal.

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THE SURGICAL TREATMENT OF PULMONARY CAVITIES, DUE TO TUBERCULOSIS.

It is not within my province, as a physician, to speak of the surgical treatment of phthisis pulmonalis. But to promote the discussion of this very important part of the therapeusis of consumption, I venture to remark that there is every reason to believe that drainage antiseptically of lung cavities will be successfully done in the future. Surgeons in this city have been successful in the operation, and Dennison, of Denver, reports several cases in which drainage promoted cures. I close this portion of my paper by requesting our surgeons to give their experience, or views, on this important question.

DISCUSSION ON THE TREATMENT OF PHTHISIS.

Dr. E. Fletcher Ingals, Chicago:

I promised the writer of the paper I would venture to discuss some points brought out, but he has so fully and thoroughly covered the ground that there is very little left for me to say.

The hygienic treatment is so important that it is well to direct special attention to it. It has been the common belief that outdoor avocations are specially beneficial for tubercular patients, but it is possible that we have been misled in this respect. The late Prof. Austin Flint regarded farmers as peculiarly exempt from the disease, but I recollect as a boy to have known many people die of consumption on the farms, and I have no doubt physicians who have practiced in the country have seen very many of these cases. I doubt whether there is so much benefit for consumptives in the occupation of farming as has been supposed; yet an out-of-door life is to be recommended for persons predisposed to phthisis, providing they are well enough to stand the exposure from rain, wind, dust or changes of temperature that it entails. I think that for the majority of consumptive patients early in the disease, nothing is of so much value as residence in a high altitude. In rare atmos-

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pheres the respiratory muscles are strengthened because the patient is obliged to breathe more rapidly and deeply, and because of the necessity of filling the lungs more completely many of the air cells are expanded, which in lower altitudes might collapse and become inflamed, and finally be the nidus of tubercular deposit. In high altitudes there is more sunshine, and the air is drier and purer. I agree with the author's remarks about the injurious effects of high altitudes on patients suffering from bronchitis, especially if emphysema has been established, yet there are some cases of chronic bronchitis that are much benefited by such climates. As a rule, nervous patients do not do well in high altitudes, even when the pulmonary condition would seem to indicate such a change. As to young children, I am not personally very familiar with the results of residence in high altitudes; I had supposed, however, that in the beginning of consumption, or in convalescence from chronic pneumonia or pleurisy, it would be as beneficial as for adults.

Generally speaking, in the early stages of chronic tuberculosis I think that removal of the patient to a high altitude increases his chances of recovery 50 per cent. But when the disease has passed to the third stage it would often hasten the fatal result. For patients with much fever and a rapid pulse, an altitude of more than 1,500 to 2,500 feet is seldom beneficial.

Consumptive patients who are having or have had hemorrhages, providing the disease has not reached the third stage, and cases of interstitial pneumonia, are usually improved by high altitudes, providing there is no considerable involvement of the heart.

I have not been as systematic in advising my patients about exercise as is recommended in the paper, though I think it an excellent plan; but I nearly always advise some form of exercise, with the same object in view. We must remember that collapse of an air cell in a person predisposed to phthisis is a source of danger.

There is no climatic specific for the disease; therefore, physicians should be careful not to recommend any special place until they have found out whether or not the patient is able to make the change. Patients are often sent from home recklessly, whether or not they are financially able to go. It is very seldom that persons of limited means get much benefit from a change of climate, for they are unable to obtain the necessary comforts. . Unless patients

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can be as comfortable away from home as at home, it is usually unwise and unkind to send them away.

The author advised altitudes of a thousand feet and upwards. I try to get patients much higher than this, for one or two thousand feet has appeared to me of no great value. Five to seven thousand feet altitude usually yields the best results, provided there are none of the contra-indications already referred to. A dry atmosphere, with equable, mild temperature, would afford the typical climate for most cases of consumption, though it can not be denied that some do quite as well in cold climates; however, dryness and equability do not go together. Much moisture is necessarily present in all equable temperatures. For example, in some parts of California the thermometer varies but a few degrees from day to day or from day to night for weeks, and the air is loaded with moisture, whereas, in the dry atmosphere of Colorado, there is constant change, with wind and frequent short storms, the temperature sometimes varying 180 degrees Fahrenheit from mid-day to mid-night.

If a person has had consumption four or five months, is able to be about, and does not wish to take a long journey, I usually recommend them to go to the northern part of Georgia, Eastern Tennessee or Western North Carolina, where they will get altitudes from 1,500 to 2,500 feet. If they can take a longer journey, I prefer to send them to New Mexico or Arizona for the winter, and to Colorado for the summer, where high altitudes may be obtained. I have no doubt many eligible points may be found in Arizona, but as yet Phœnix and Tucson are the only places where patients may expect to get accommodations, and, unfortunately, these are not very good. I seldom send patients to Lower California in the early stages of phthisis, but consider it an excellent place in the later stages, especially well back from the sea shore. For patients suffering from bronchitis, Lower California is a suitable place.

I was not asked to say anything about the medical treatment of the disease, but can not refrain from saying that I was glad to hear the doctor speak as he did of opiates, for I believe more harm has come from their use in phthisis than from any other drug that is ever given.

I fully agree with the paper as to the value of alcohol, though I am usually in favor of giving larger quantities than the author

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has recommended. I now recall a desperate case with a large cavity in one lung, that lived for ten years and possibly much longer, I think solely because of the whisky he consumed. When I last saw him he was almost as robust as the chairman of the Committee of Arrangements (Dr. Earle).

The question of draining pulmonary cavities is one of interest, but I do not look forward to the benefits from it that the author anticipates. If there were only one cavity and no other tubercular deposit or constitutional tuberculosis, I would expect benefit from drainage and thorough cleansing of the part; but in pulmonary tuberculosis it is impossible in 99 cases out of 100 to find any particular part of the lung which may be drained with any benefit to the patient, for when cavities have occurred the disease has become so extensive that very little of it can be reached.

DR. H. A. JOHNSON:

There is certainly not time enough to discuss in an extended way the topic which has been brought before you by the paper, and perhaps there is only one thing I ought to touch upon. In the main, I agree with the conclusions which were expressed in the paper. There are some difficulties, perhaps, in the way of a common understanding of things. The question of, What is high altitude and what is not? is one that is understood differently by different persons. I do not propose to say anything about it, but only to emphasize so far as I can this thought: that one of the most favorable localities to be found for phthsical patients will be the region where vegetable life is at its minimum—in other words, the arid countries, whether in low or high altitudes. It may be the sea coast if the air is dry. We may have a desert near the sea coast, but, as a rule, I think what we want is a sunny and dry atmosphere, one which is not so cold as to prevent patients from freely exercising in the open air, and not so warm as to make it uncomfortable to take such exercises. We find this condition of things on the elevated plateaus, where the localities are shielded by mountain ranges, which abstract from the air its moisture. It is in such a region generally that all vegetable life is at its minimum. If you take Dennison's seasonal maps and mark the dryest portions, the most intense red on the maps, you will find, as a rule, the habitat most favorable for tubercular patients. Unfortunately,

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many of these locations are where the comforts of life are also at a minimum.

I can add very little to what has been said by Dr. Robison with reference to the hygienic treatment of tuberculosis, only I should advise just as much good lean meat as the patient could digest, as well as plenty of butter, milk, eggs and good bread; a sufficiency of clothing, but not overburdening the patient with layer after layer of cloths, as we sometimes see patients that come into our offices.

The question of the habitual use of alcohol presents to us a grave problem. I confess that my own experience has led me to question its value, except in the form of elixirs or bitter tinctures, just enough to give a little local stimulant—the elixir of gentian or compound tincture of cinchona taken along with food may be helpful. Rock and rye has never been a favorite with me. I prefer the rye in the form of bread. There may be exceptions to the rule. I know of cases where patients have gone on and drank like a fish and have lived many years; but such facts have no particular value. It is said of an aged chemist who recently died that he was all his life a temperance man, while his companion, who was a hard drinker, outlived him. That does not prove anything one way or the other. As a rule, I do think the digestive powers are lowered by any considerable use of alcohol.

Cough mixtures, as a rule, interfere with digestion, and I confess it is seldom that I feel like prescribing them.

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CONTRIBUTION TO THE REPORT ON DRUGS AND MEDICINES.

J. Sohneck, M. D., Mt. Carmel.

Catalpa Speciosa, Warder.

The genus Catalpa is represented in North America by two beautiful trees: first, *Catalpa speciosa*, Warder, which grows in low, rich bottom lands along the rivers of Southern Indiana, Southern Illinois, Tennessee, Missouri and Arkansas; second, *Catalpa bignonioides*, Walter, which is more southern in its habitat, and is found in Georgia, Alabama and the Carolinas. This is a smaller and more spreading tree than the former. Until the year 1853 botanists regarded them as of the same species. It is important to bear this fact in mind, as authors who write of the tree as seen in the Eastern and Southern States refer to C. bignonioides, while those whose observations are made in the Middle or Central States refer to C. speciosa. The latter is the species considered in this paper.

They are generally regarded as the same species by the laity, and are known as the patalfa, catalpa, Indian bean, catawba, and cigar tree.

The genus belongs to the *bignoniocea*, which is a large order of, chiefly tropical, American plants. They are especially noteworthy for the beauty of the flowers of many of the species. The wood, bark, and leaves of C. speciosa emit a fœtid odor when handled or burnt; this unpleasant odor is not shared by the flowers, which are pleasantly fragrant.

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From earliest childhood I had been taught that the tree was poisonous; and this view is shared by the people generally in the vicinity where it grows. On consulting early botanical literature I find this belief has existed from our first acquaintance with the tree. F. A. I. Wangenheim, a German forester, who served in the British army during the Revolutionary war, published, in 1787, *Notes on American Forest Trees.* Of *catalpa* he says:

"The white inhabitants in America affirm that the negroes in the Southern States are in possession of a secret method by which they can prepare, from the roots of this tree, a slow but always most serious poison. The inhabitants of Carolina, Virginia, and Maryland are so assured of it that the catalpa trees are extirpated in the vicinity of all the habitations and plantations; and that a law passes sentence of death upon the negro who secretly plants or cultivates the tree."

Ludgi Castiglioni, who traveled in this country from 1785 to 1787, published an account of his journey, in which he refers to the same prejudice. He says:

"The catalpa trees were banished from the lawns and gardens in Pennsylvania when the rumor was abroad that the negro slaves made use of them to poison their comrades."

He then discredits its poisonous properties, but says: "A decoction of the wood provokes vomiting, but it produces no other bad effects on the system."

Kämpfer and Thunberg state that in Japan the pods of a closely allied species are used to relieve persons suffering from asthma and bronchitis, and that a poultice made of the leaves is valuable in relieving the severe pains of neuralgia. In his inaugural thesis to the University of Pennsylvania, 1803, Dr. Robert Holmes refers to a popular belief in its prophylactic properties in warding off malarial and contagious diseases.

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In the following experiments and applications I have used a tincture, prepared by myself, from the inner or live bark of the root and body of the tree. It was made by the old, or maceration, method, using an ounce of the fresh bark to make an ounce of the tincture. The experiments were made upon my friend Mr. G. B. Davidson, a man of excellent mental attainments, and myself. We were both then nearly thirty years old and in excellent health.

RECORD OF EXPERIMENTS ON DAVIDSON.

Date.	Temp.	Pulse.		Remarks.
		Sitting.	Standing.	
1876.				
March 14.				
3 P. M.	.....	70	.....	Took one dram of the tincture.
4 "	.....	70	.....	Could feel no effects of the drug; took one dram of tincture.
March 22.				
12 M.	.....	76	.....	Ate a hearty meal.
1½ P. M.	101½	76	.....	Took one dram of the tincture.
2½ "	100	72	.....	No effect from the drug; took one dram of the tincture.
3½ "	98½	72	.....	" " " " " " "
5½ "	99	78	.....	" " " " " " "
6½ "	98	72	.....	No effect from the drug; ate a hearty supper.
8 "	99½	78	.....	Took two drams of the tincture.
9 "	98½	69	.....	No effect from the drug; took two drams of the tincture.
11 "	99	66	.....	Nausea, and the pulse weak; nausea during remainder of the night, and the following morning two large semi-solid stools.
March 25.				
8½ A. M.	98¾	72	.....	Took two drams of the tincture.
9 "	98	72	.....	No effect from drug; took two drams of tinct.
9½ "	98¾	68	78	" " " " " " "
10 "	98¼	66	72	Pulse irregular; slight nausea.
10½ "	99¾	66	78	Pulse irregular; took two drams of the tinct.
11 "	98	68	78	" " " " " " "
11½ "	98½	68	76	Pulse irregular and weak.
12 M.	98¼	66	80	Pulse irregular; had several copious stools during next twelve hours, semi-solid and dark color.
March 27.				
1 P. M.	98¾	94	103	Ate a full meal at twelve o'clock, then walked nearly a mile.
2 "	98¾	87	94	Read almost constantly between the time of making the notes.
3 "	99	87	92	These observations are made as a comparison with the foregoing.
4 "	98½	84	90	

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RECORD OF EXPERIMENTS ON SCHNECK.

Date.	Temp.	Pulse.		Remarks.
		Sitting.	Standing.	
March 22.				
12 M.	.....	.....	.....	Ate an ordinary meal.
1¼ P. M.	101¼	78	... . .	Took one dram of the catalpa tincture.
2½ "	98¾	66	.....	Slight burning sensation in the stomach; took one dram of tincture.
3½ "	98¼	60	. .....	" " " " " " "
5½ "	99¼	66	.....	Burning sensation in the stomach less: have taken severe exercise since last dose; took one dram of tincture.
6½ "	98½	72	....	Burning sensation in stomach almost stopped; ate hearty supper.
8 "	99	72	.....	Felt no effect of the drug; took two drams of tincture.
9 "	98¾	72	.....	" " " " " " "
10 "	98¾	72	.....	" " " " " " "
March 25.				
7 A. M.	.....	.....	.....	Had a copious semi-solid bilious stool.
8½ "	98½	75	.....	Took two drams of tincture.
9 "	98½	76	.....	Felt no effects; took two drams of the tincture.
9½ "	98¾	66	84	" " " " " " "
10 "	99	68	72	Decided nausea; pulse weak.
10½ "	97	66	78	Nausea less; pulse weak, dropping two or three beats per minute; took two drams of the tincture.
11 "	96¾	62	78	Nausea slight; took two drams of the tincture.
11½ "	96½	68	78	" " " " " " "
12 M.	97½	68	78	Decided nausea; no desire for food.

To compare with the above I made the following observations:

March 27.				
1 P. M.	98	74	81	Had taken a regular meal at 12 M.
2 "	99	78	84	
3 "	99	70	72	
4 "	98½	70	72	

From the above experiments we may deduce the following:

1. That with dram doses of the tincture, unless continued for a considerable time, the system is but slightly affected.

2. That if taken in large enough doses it will slow the heart-beats, weaken its action, and finally produce an intermittent pulse.

3. That it acts on the alimentary secretions, producing a mild cholagogue, cathartic effect.

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4. That in sufficiently large doses it produces nausea, and probably, in still larger doses, vomiting. It is probable that in this way it acts beneficially in asthma and bronchitis.

5. That by its sedative action on the heart it acts as an antipyretic.

In its clinical application I have found it most beneficial in those cases of pneumonia where the secretions of the alimentary canal were inactive, and in which there was also a rapid and full pulse. It reduces the pulse-rate and tension, and increases the biliary secretion. Two drams of the tincture should be given every one to three hours.

During the past winter I have used it often in cases of epidemic influenza with high fever, and especially where the inflammation extended into the frontal sinuses. In all of these acute cases I have never ventured to continue the remedy after the first two or three days, and have given it for this period only in sthenic cases. I have thought it best to feel my way carefully in using a new remedy whose principal action is on an organ so vitally important as the heart.

Mr. E. O. Rau has made an imperfect chemical analysis of the seed. He obtained from them tannin and a bitter crystalline principle.* Mr. F. K. Brown, by a more thorough analysis of the seed, found a resin, tannin, sugar, a fixed oil, and two undetermined crystalline bodies.† It is reasonable to suspect that the medicinal qualities reside in the crystalline principles mentioned in the above analysis. It remains for chemists to tell us in which part of the plant they are most abundant, and, if possible, to isolate them, so that they may be used for further and more definite experiments. I present these notes and conclusions as the results of careful observations, and hope the medical profession will give the drug a thorough trial.

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* American Journal of Pharmacy, vol. xiii, p. 204. † Ibid., 1887, p. 230.

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CONTRIBUTION TO THE REPORT ON DRUGS AND MEDICINES.

C. E. Davis, M. D., El Paso.

OPIUM IN THE TREATMENT OF DISEASE.

The whole medical profession resort to the use of this drug, some of its preparations, or its alkaloids, more than any other drug in the market.

It is used by the regular, the eclectic, homœopath, and every quack, path or ism in the world, to soothe every pain, from the simplest infant colic to the severest pain of a neuralgia, gout, or cancer. If it were not for opium in the proprietary and patent medicines, their sales would be a drug on the market, instead of *the drugs* of the market, and there would not be half as many patients hankering for doctors and something to soothe. We are sometimes called to see a child; find it in a state of coma, and inquire into the cause; find it had been given some of Dr. Bull's cough syrup, or some other soothing panacea. And right here in the infant cradle is where the foundation is laid for the opium habit in after years.

Begin with the infant, and every time it is sick give it some patent nostrum which contains opium, and after a while you can hardly carry him through a spell of sickness without resorting to the use of this remedy.

Many people have formed the habit by taking patent medicines, such as Wakefield's blackberry balsam, different kinds of cough mixtures, and soothing cordials.

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Opium is one of the best drugs in the world. I might say the greatest boon God has given to frail man. It is also one of the worst drugs in the world if improperly used. A nobleman once asked his servant to provide him a dinner of the best things he could procure. When his guests came to dine with him, behold, there was nothing but tongues of different kinds on the table. Then the nobleman asked his servant to provide a dinner of the worst things in the world. Behold, when he came to dine again there was nothing but tongue to eat. The servant made satisfactory explanation that tongue was the best thing in the world, as well as the worst. So I may say of opium. It is the drug with which we may do the most good, if properly used, as well as being the worst drug in the world, and does the most harm if improperly used.

I wish to speak of opium under four heads:

First. In the treatment of severe pain or neuralgia.

Second. In the treatment of inflammations.

Third. In the treatment of diabetes.

Fourth. In the treatment of eclampsia.

We are all acquainted with the uses of this remedy in in cases of severe pain, such as neuralgia. We need not speak of its soothing effect here. The only thing of which to speak is to *warn* even those who well know how easy it is to form that awful habit. I would rather die at once than to live a very prolonged life of an opium habit. Many physicians have practiced for years, and yet know but very little about such cases.

These patients steal, lie, or do anything mean or indifferent to obtain the drug, and then tell you they are not taking it at all. I have remained during the night with some friend or patient who is trying in earnest to break off the habit. He wrings his hands, pulls his hair, moans, groans, and prays for relief, asking where he can go, or what he can do to get rid of his agony. He runs about the house, tearing

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his clothes and striking himself against the walls, and sometimes the severest retching and purging. He can bear it no longer. His wife offers him whisky or morphine. He takes the whisky and soon he is worse than a raving maniac. He threatens his own life and that of others. These things have I witnessed, and when I return home the next morning I feel more disgusted with myself and patient than I would to have been out with one of the worst cases of alcoholic delirium tremens. Therefore, in the treatment of neuralgia or severe pain, if there is a possible chance of recovery, do not prolong its use.

The longer I practice, the less I use it in this class of cases. There are exceptions to all cases, and these are where we can not expect a cure, and where a fatal issue is imminent and not many months distant. Here I would make the patient comfortable and happy. Man frequently comes into this world amid shrieks and screams from pain and agony, and I believe, if possible, we should help him go out of it peacefully, calmly and quietly, and especially when I expect to attend the funeral and listen to the minister tell of my patient being in a trance a few days before, where he, or she, had visited that beautiful land and had seen all our friends that had gone that way before us. I sit there in an uneasy posture, and listen to the story of an opium dream.

Second. Its use in inflammations. Here I will not say much, as it is a settled question as to the benefits of opium in acute inflammations. We use it to relieve pain until resolution takes place, or until suppuration is the result. In inflammations of the mucous membranes, it allays irritation, gives rest to the parts, and has a relaxing influence in biliary or renal colic.

In inflammation of the serous membranes, this is an invaluable remedy.

It appears to have a direct curative power in such diseases as pleurisy and peritonitis, as we are all aware of the

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large doses which may be given and seem to have direct curative influence in pleurisy and peritonitis.

Third. In the treatment of diabetes, it is one of the best remedies to relieve the restlessness and cravings for food and drink. It also lessens the amount of sugar in the urine. Diabetics tolerate the use of morphine remarkably well. Codeia is sometimes preferred, on account of being less constipating. I have at present two diabetic patients who have had the disease about three years. In one case I so controlled the amount of sugar and urine passed by the use of morphine and codeia that when she made a visit to the east last fall she consulted a prominent physician there and he declared she had no diabetes; if so, I had good control of it. She returned to her usual diet, and in a few months was as clear a case of diabetes as ever. In neither case have I formed the habit, but by the continued use of small doses the sugar disappears and the patients increase in weight.

Diabetics tolerate the use of the drug well, and will do better under its use than anything else I can give them.

I can prolong their lives, make them comfortable, and not increase the dose very rapidly. Cures are reported by high and trustworthy authorities from the use of morphine and codeia. I use these alkaloids in such cases sparingly as possible, but think in such cases the prolonged use of the drug is necessary.

Its Use in Eclampsia.—Nearly all agree upon the use of opium in the cases of which I have spoken, but in the treatment of eclampsia there is a great difference of opinion. Dr. W. P. Bolles says in "The Reference Hand-book of Medical Sciences," "Serious coma may follow small doses of morphine in certain diseased conditions, as in anasarca and some cases of albumenuria." Dr. Alfred L. Loomis, of New York, says quite the contrary. He says, "Morphine can be administered in full doses without danger to patients with acute uremia." Please read what he says in his work on heart, lungs and

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kidneys, under the head of "Acute Uremia," page 451. Dr. Loomis is not a man to exaggerate or misrepresent a single case. Both in the hospital and college, as a clinical teacher, he would report his mistakes and unsuccessful cases, as well as his successful ones. In the year 1875, while I was yet a student of medicine, I became acquainted with a family in which there were four children. All had scarlatina in a mild form. As a sequel, after about two weeks, all had nephritis. As they called it, all had dropsy. I have observed that during some epidemics, or some seasons, many have nephritis as a sequel, and at other times, very few have this trouble following scarlatina. The parents of the family of which I spoke watched their children have one convulsion after another until two of them passed off into fatal coma within a few days—all previously healthy children. I have always believed it was because the physicians in attendance knew nothing of the treatment of scarlatinal nephritis. The next winter I had the pleasure to listen to Prof. A. L. Loomis lecture on scarlatina and uremia. I paid close attention to what he said, as I well remembered the death of those two children. In all Loomis' treatment for acute uremia "for the relief of convulsions and coma," he says "give full doses of morphine hypodermically. It controls muscular spasm, opens the avenues of elimination, counteracts the poison on the nerve centres, and thus becomes another means of saving life in these too often fatal cases." After I began practice I did not see a case of scarlatina until the winter of 1880. In the village of Lisbon, where I lived, we had quite an epidemic, and that year nephritis was a very frequent sequela.

One evening I learned that a neighbor's boy, aged twelve years, was having convulsions, and another physician in attendance. I went home, read over Loomis carefully as to what he had to say about uremia, and sure enough, before morning I was called in counsel to see the boy. The doctor

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told me that the boy had had six convulsions that night, and when he had the last one he sent for me, and did not think he could live until I arrived. The boy then was in a state of coma, no excretion of urine, general anasarca, and in fact every tissue was filled with water. The doctor had been using chloroform to control the convulsions, and said everything he had given in his stomach had been vomited. I suggested a full dose of morphine hypodermically, and enough to control it. He told me to use it, and I gave about one-half grain hypodermically. The doctor said to me that he felt pretty certain before that the boy would die, but now he felt sure of it. He thought it queer treatment to give a boy, already in a comatose state, one-half grain of morphine. In about two hours the boy awakened and talked some; said his head ached. The next morning he seemed better, passed some urine, and after twelve hours had a slight convulsion, but I then repeated the one-half grain of morphine, and continued to give him one-fourth grain every twelve hours for a few days, and with very little other treatment, the boy made rapid and complete recovery.

A few days after that one of my own scarlet fever patients began to show signs of nephritis. I examined his urine, and found it loaded with albumin. I tried all the ordinary remedies, such as corn sweats, digitalis and diuretics, for several days, but the boy grew worse all the time. The boy lived with his grand-parents. I called one evening and found him playing cards with his grandfather. He said he felt well, only his limbs were too heavy to walk well. There was so much oedema of his feet that they filled his grand-father's slippers. Had been using warm water injections as a diuretic, and he said he thought we pumped more water into him with that hose than came away from him. He told me his scrotum was swollen, which seemed to worry him a little. I examined it and think it contained about a pint of water. His grand-father suggested that, as our med-

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ication did no good, we give him a warm sitz bath, put him to bed and let him rest without medicine that night, he thought it would do as well as my treatment any way. So I agreed and went home. The next morning, about sun-rise, the old gentleman was after me to come in a hurry, as the boy was out of his head. I hurried to the house and found them holding the boy on the bed while having a terrible convulsion. They told me to stop the convulsions and let the boy die easy. Use anything, and if he died they would not blame me. Stop the convulsions was all they asked.

He was the most thoroughly water-logged of any one I ever saw. I immediately gave him one-half grain of morphine hypodermically, and repeated the same in half an hour. During the next six hours he had eight convulsions. I gave him two doses, one half-grain each, and two doses, one-fourth grain each, making one and one-half grains of morphine within the six hours. He was completely comatose during seven hours, and did not make a voluntary motion. In the meantime I gave a drachm of the fluid extract jaborandi per rectum, which produced a copious flow of saliva, and in connection with the morphine, a diffuse diaphoresis. About three o'clock P. M. he spoke to us, and asked for the vessel, and voided from two to three pints of urine. During the night he rested well, except getting up to pass large quantities of urine. The next day he was able to test his own urine for albumen, and found very little in it. I gave him one-fourth grain of morphine every twelve hours for a few days, and with very little other treatment, he made a rapid and complete recovery.

Dr. J. A. Freeman, of Millington, and who lived but a few miles from me at the time, will confirm some of my statements in regard to the use of morphine in the treatment of puerperal eclampsia and eclampsia of uremia following scarlatina. I remember calling at Dr. Freeman's office when we were having an epedemic of scarlatina. As we

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were talking over our cases of nephritis, a lady ran into the office and said, "Come quickly; the little boy is dying. The doctor very kindly asked me to go with him, as this was a case of nephritis following scarlatina. In a few minutes we were at the house, and found the little boy, five years of age, in convulsions. The doctor immediately injected hypodermically one-half grain of morphine and also a half drachm of the fluid extract of jaborandi. In half an hour the sweat and saliva were flowing profusely. He did not have another convulsion. I saw the doctor a few days after, when he told me the boy was convalescing nicely, but since he had run the water out of the little fellow with morphine, there was not much left of him, and he was not aware at first that he was so water-logged.

In April, 1880, Dr. Freeman sent for me to assist him in a case of puerperal eclampsia. When I arrived, some six miles from my place, the patient was lying in a state of complete coma. The doctor told me she had had quite a number of convulsions before he came, as he lived about six miles from there, and the convulsions began before they started after him in the night.

He had already controlled the convulsions with hypodermics of morphine. She was about eight months advanced in pregnancy. The os was dilatable, though not fully dilated. She was entirely comatose, and sweating freely, and no uterine contractions. We dilated the os, applied the forceps and delivered one child, after which a second child with breech presentation was delivered. They were both still-born, and each weighed about seven pounds. There was very little hemorrhage, but during the day she could not swallow anything. We injected about four ounces of whisky hypodermically. At 5 P. M. we could not see much change in her condition. Introduced the catheter and found very little urine, highly colored and loaded with albumen. I suggested another one-half grain of morphine

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to relieve the kidneys, not thinking she could live until morning, but gave her one-half grain of morphine hypodermically and left for home.

The next day the doctor saw her and wrote me that she was rational, and kidneys acting well. She died about ten days after from some other cause, but had entirely recovered from the uremic symptoms.

I could cite many other cases of puerperal eclampsia, some of which Dr. Freeman saw with me, successfully treated with large doses of morphine hypodermically. During our epidemic of scarlatina, in the the winter of 1880 and 1881, I treated quite a number of children who had uremic convulsions with large doses of morphine, and all recovered.

To be sure, I used other remedies, but I soon learned that the one remedy did the work. Ever since that winter, when I have a case of scarlatina nephritis, I control it before the system gets overwhelmed with urea.

How it does it, I do not know, whether the morphine counteracts the poison on the nerve centers or not. But I do know, as a clinical fact, that morphine in sufficient doses and in such cases does act as a powerful diuretic, and carries off the urea, and in a very few days the urine will be free from albumen. I had a case of severe nephritis this past winter, in a young man eighteen years of age, which came on after two weeks, as a sequela of the grippe. The father called me one morning on account of his face being swollen so badly, and said he had gained flesh very rapidly, as he weighed twenty pounds more than his usual weight. I treated him with large doses of jalap and cream of tartar for his bowels, with the aid of large injections of warm water. Used morphine alone for his kidneys and skin, and inside of two weeks I reduced his weight twenty-nine pounds, and his urine was perfectly free from albumen, and he is perfectly healthy at present.

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Two years ago, at Rock Island, Dr. C. Warrington Earl, of Chicago, rather scored me for advocating the use of morphine in eclampsia for children. He said he would not give morphine to children at all. During the last ten years I have frequently known and heard of children in the neighborhood dying from convulsions following scarlatina.

I truly believe I can take any case of uncomplicated scarlatinal nephritis, even after eclampsia sets in, and save life in every instance. In some cases of puerperal eclampsia, where there has been albuminuria for months, where we have a partially broken down kidney, or a general parenchymatous nephritis for some time, or some of the many complications which may come up in the puerperal state—in such cases we can not expect such good results. But where we have an acute inflammation of the uriniferous tubules, producing an acute uremia, either in puerperal or non-puerperal cases, here I think morphine almost a specific.

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OPTHALMOLOGY AND OTOLOGY.

ROBERT TILLEY, M. D., CHICAGO.

FOUR CASES OF DISEASE OF THE MASTOID.

Barker, of London, in a study of abscesses of the brain, states that three-fourths of the abscesses of the brain are in the tempero-sphenodial lobes, and that nine-tenths of subdural abscesses are found in a circle one inch and a half in diameter, with its center one inch and a quarter behind and one inch and a quarter above the center of the bony auditory meatus. It might further be said that nearly all these abscesses originate from some disturbance in some part of the external auditory apparatus. As long as facts substantiate this statement, the study of mastoid affections will not cease to be interesting.

I desire to submit to the Society brief notes of four cases of mastoid affection, which have recently come under my care:

Case 1. W. J. M., thirty-eight years of age, first seen February 25, 1888. Recommended to my care by Dr. H. T. Byford. The patient had been suffering great pain on the right side of the head and great sensitiveness, expressed by rigors when the ear was touched. There was some discharge from the external meatus and granulation tissue extended from the posterior part of the membrana tympani. The temperature varied from 99 to 101, and the pulse from 100 to 120. There was not severe pain on pressure over the mastoid

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region, but a good deal of pain was complained of over the whole region of the temporal bone and extending to the right eye. The distress associated with the eye gave him great concern. No proof of hearing could be elicited on the right side. He was delirious at times and talked of being poisoned by his family. He was recommended to the hospital for treatment, as the home did not offer the desirable facilities for what was supposed necessary, a mastoid operation. He refused to go the hospital. With the use of cathartics, and general attention to the condition of the external meatus, his condition was somewhat relieved. But on the 17th of March, the following month, he entered St. Luke's Hospital, for operative measures. One of the inducements which were held out to him to come to the hospital, was that there was always two or three doctors present.

His head was shaved, he was sitting on the operating table to be anæsthetized. Besides the nurses, there was only one of the internes present to assist me, when his wife stepped up to me and said, "Doctor, did you not tell me there would be three doctors present?" "I may have said so, madame, and there probably will be before we begin the operation, but if you insist on having some one else here, it is your privilege. Only we must wait till Monday." (It was then Saturday afternoon.) "I prefer to wait, doctor," she replied. I determined to give him whatever benefit might be obtained from the advantage of the hospital over his own home during the interval. I explored anew the external meatus, but found nothing promising there. I explored the nose more thoroughly than was possible in his home, and I was a little less sensitive to his expressions of pain. I found the septum, the cartilaginous part, eroded on both sides, and the posterior and upper part of the nose to contain a vast quantity of muco-purulent material. I will add here that I could elicit no history of syphilis. There was a large family, no miscarriages and no deaths. It was denied, and he offered no

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objective indications of its previous existence. There was a history of a blow on the head, which I could in no way connect with the existing affection. From the condition of the nose, however, I concluded that constitutional treatment would probably be advantageous. This treatment was begun at once and his nose was washed three times a day. Two days later, Monday, his condition was so much improved that the operation was no longer justifiable. Under the same treatment improvement was so rapid that by the following Saturday, seven days from the time of the proposed operation, he was dismissed from the hospital, and continued under treatment as an office patient. The pulse and temperature became normal; the pain in the eye and in the head over the region of the temporal bone, and the distressing dizziness, disappeared. Still later, the discharge from the middle ear ceased, and the hearing became practically normal. The ulcerated spots on the septum of the nose were healed. The process of cure extended over four months. He has had no return of the difficulty.

The interesting points in this case are the severe pain in the head, involving confinement to bed for six weeks, the extreme sensitiveness of the ear, the confusing dizziness, all of which yielded, without operative measures, to hygienic attention to the nose, and the persistent exhibition of constitutional measures, notwithstanding the impossibility of obtaining any specific history.

Case II. Mr. A. C., aged thirty three years. Date of admission to hospital, February 10, 1889. About six weeks previously experienced loss of hearing in right ear; no pain. Two weeks later ear began to discharge. During the last week pain has been very severe. No evidence of hearing on affected side; the mastoid region was tender, red and swollen; some discharge from external meatus, and membrane perforated. There was no delirium. The throat gave evidence of previous cauterization, which the patient said

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was done with nitric acid in London. The pulse averaged 100, and the temperature varied from 99° to 100° F.

Fomentations and palliative measures were adopted three days without effect.

February 13, 1889, the usual mastoid operation was performed. The external part of the bone was not rough, and no pus was encountered in reaching the bone, the only variation from the usual proceeding being in the choice of instruments for perforating the bone. I used for this purpose a modified farrier's knife, the one which I show you here. When we have to decide between the chisel and the drill, for the perforation of the outer table of the mastoid, the chisel is, in my judgment, by far the preferable instrument. The cut is cleaner, and the operative field is plainly open to view. Such is not the case, however, when we use the ordinary drill devised for that purpose. With the use of this knife, however, the advantage of the chisel is obtained without the sudden blow associated with the chisel, which is certainly to be avoided. If the knife be held firmly and the head kept steady and a good support be secured for the elbow, the outer plate is very readily perforated. In the present case, the antrum mastoideum was rapidly reached, pus appeared in the field of operation, and water passed in through the opening, readily came through the external meatus.

The wound and external meatus were irrigated with 1-2000 bichloride solution, and dressed with iodoform gauze. In the evening of the day of the operation the patient was reading the newspaper; the second day after the operation the temperature and pulse were normal, and discharge from the middle ear ceased. This was a typical case of a simple abscess of the mastoid cells, uncomplicated by any marked necrosis; and one month from the time of his entry to the hospital he was discharged, the wound completely healed, and with normal bearing. The history is taken from the notes of Dr. J. E. Perekhan, then interne in

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charge of the department at the hospital. The reason of the rapid recovery in this case is the absence of necrosed bone, the suppurative condition being confined to the soft tissues in the antrum mastoideum and the middle ear.

Case III. Mr. M. M., thirty-three years of age, bank clerk. Entered the hospital March 28, 1889. There is a history of protracted catarrhal affection of the nasal passages, with an impairment of hearing on both sides, but worse on the left side. Two weeks previous to his admission, complained of a cold in the head. Severe pain, worse at night, was experienced in the right ear, and marked impairment of hearing. There was some muco-purulent discharge from the right ear. There was marked tenderness over the region of the mastoid, extending also in spots over the whole temporal bone. The swelling was insignificant, the pain was considerable, but there was no delirium. Temperature varied from 99° to 100°, the pulse did not exceed a hundred.

During the interval between March 28th and April 14th, various emolient measures, constitutional treatment and free paracentesis of the membrana tympani had been tried, without relief. The nose received attention, but beyond a puffiness of the inferior turbinate bones, there was no disturbance in that region.

April 14th, with the assistance of Dr. Robert Locke, interne in charge, from whose notes the case is reported, an incision was made in the usual position behind the ear. The bone was found rough, and the periosteum was easily separated from the bone. The antrum was penetrated by the use of the same knife, making a gutter-like groove just on a level with and a little behind the external bony canal. The penetration of the cells gave exit to a little muco-purulent discharge, and the solution used for irrigating came out of the external meatus. The wound was dressed with iodoform gauze.

There was no marked relief from the pain over the

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temporal bone by the operation, nor was the temperature influenced. At the first few days after the operation, by closing his external auditory canal, the patient could blow through the opening in the mastoid bone. The same constitutional remedies were continued after the operation for about two weeks, with no convincingly satisfactory results. At that time there appeared a swelling above and somewhat anterior to the ear, and May 4th, about three weeks after the opening of the mastoid cells, the patient was again anæsthetized, a deep incision, parallel to, but about an inch and a quarter anterior to the primary incision for the mastoid operation, was made, and the bone was found rough. The lower part of this incision began at the juncture of the upper part of the auricle with the integument of the scalp, and extended upward about an inch. This incision was connected with the wound of the first operation beneath the periosteum, and a strip of gauze was placed beneath the periosteum, so as to facilitate the passage of irrigating fluids over the rough bone. Both wounds were irrigated with three per cent solution of hydrochloric acid. There was no pus found in this second operation, but a steady, though somewhat slow, amelioration took place. The discharge from external meatus ceased and the hearing improved. The pain was less severe and gradually the temperature subsided. The irrigation of the wound was continued twice a day, and both wounds were kept open for three weeks. It was not, however, before June 3d—about a month after the second operation—that the temperature became normal, and even then slight elevations occurred regularly every evening till June 12. June 15th, a little more than ten weeks after his admission to the hospital, he was discharged. The wound was completely healed. The perforation in the membrana tympani was healed, and the hearing was better than on the other side; not, however, so good, as far as one can judge, as before the existence of the affection.

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I am convinced that the irrigation with the hydrochloric solution rendered very good service here. In fact, I think it was the chief feature in the cure. The swelling, which appeared in front of the ear, disappeared readily after its use, and no marked advantage was obtained before its adoption. The use of hydrochloric acid solutions was, I think, first brought prominently before the people by Dr. Edmund Andrews, of this city, in the year of 1887.

Case IV. Mr. A. P., age thirty-seven. Saw the patient for the first time March 22, 1890. Referred to me by Dr. D. T. Nelson. Says left ear has been discharging for about two months, has been in bed that time and is very weak. There was no cerebral disturbance. There was distinct redness, swelling and tenderness over the region of the mastoid, left side, extending in the direction of the stemo-cleido mastoid; temperature ranged about 100. Examination of bony external meatus showed necrosed bone. He was recommended to the hospital for operation. He did not follow advice until April 3d. At this time, when he entered the hospital, the tissues extending downward from the level of the external meatus were greatly infiltrated, but gave no clear indication of the presence of pus. The breath was very offensive and the tongue heavily coated.

On making the primary incision, the bone was felt to be decidedly rough; the periosteum was easily separated, and an exposure of the denuded bone showed rather a concave than a convex surface over the mastoid process, as though some operation had previously been performed there. Pulling the ear forward, the sharp spoon slipped readily into the external canal, where the greater part of the diseased bone was located. It was not thought desirable, under these circumstances, to penetrate the cells, as the principal focus of necrosis was in the external meatus. The necrosed bone was scraped thoroughly with a sharp spoon, which was passed into the external meatus from the opening behind the ear.

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The infiltrated tissues in the neck were explored for pus, but none was found. The patient felt better, slept better and ate better after the operation, but it soon became manifest that some outlet would be necessary to relieve the inflamed tissues lower down. The operation gave exit to a quantity of dark, thick sanguinolent pus, but no well-defined pus pocket was opened. About ten days after the operation, it was found necessary to make an incision lower down in the tissues of the neck, to give vent to a well-defined pocket of pus.

The original wound over the mastoid process and the necrosed tissue in the external meatus, as well as the wound in the neck, were freely irrigated twice a day with one per cent. strong hydrochloric acid. His mouth was cleaned several times daily with chlorate of potassium solution two per cent.

The patient improved rapidly, so that on the 27th of April he was discharged from the hospital, to be treated as an out patient. The irrigation with hydrochloric acid solulution was, apart from the scraping of the bone and the incisions to relieve the infiltrated tissues, the chief feature of the treatment of this case. I should add that some preparation of mercury was administered, but my conviction is that the benefit obtained was rather due to the hydrochloric acid solution. He is still under observation, but it appears that no modification of the treatment will be needed, beyond the application of a little burnt alum to any fungoid growths which may appear.

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THE NATURE OF EYE STRAIN AND ITS RELATION TO HEADACHE AND OTHER NERVOUS DISORDERS.

F. C. Hotz, M. D., Chicago.*

The question whether, and to what extent, the visual functions can cause nervous disorders, has of late attained a great prominence, and has in some quarters lead to very animated discussions, not entirely free from personal feelings. It certainly is a question of great practical importance; it is a question that will interest every physician; and I may, therefore, hope I shall be able to enlist your attention for it for a few minutes. I shall try to be as concise as possible, and shall not enter into any technical details, unless they should be necessary for your understanding. I only fear that in the short time allowed me I shall not be able to do the subject full justice.

In the first place it will be necessary to define the term "eye strain." What is meant by it? It is a convenient term to express the fact that, during the visual act, one or several of the ocular muscles are taxed with an unusual amount of work to sustain perfect vision.

The indispensible conditions for perfect eyesight are these: That our eyes are directed toward the object in such a manner that the visual line of each eye connects the object with the macula of the retina; (2) that a perfect image of the

*Professor of Ophthalmology at the Chicago Policlinic, and Surgeon to Illinois Charitable Eye and Ear Infirmary.

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object is produced in the macula; (3) that the perceptive elements of the retina are perfect; and (4) that the impressions made upon these perceptive elements are perfectly transmitted by the optic nerve to the brain, and there converted into visual perceptions.

For our present purpose, the first and second requirements only concern us, because they are more or less dependent on the action of the ocular muscles, and we shall now have to see how they can bring about that condition which is called eye strain.

A distinct, well-defined image is produced in the retina only if the rays of light the eye receives from the object are brought to a focus in the retina. As the distance of the retina from the cornea is immovably fixed, while the distance of the objects varies from a few inches to many hundred feet, it is obvious that we could not see distant and near objects equally well if our eyes were not endowed with the faculty of increasing or decreasing its focalizing power according to the distance whence the rays of light come. This is the power of accommodation which is vested in the ciliary muscle. Now, the normal eye is so constructed that rays from distant points are focused in the retina without the aid of the accommodation; the ciliary muscle, therefore, is relaxed, inactive while we are looking at distant objects, and the power of accommodation is needed for near vision only.

But there are a great many exceptions to this physiological order under which the eye enjoys perfect muscular rest while gazing at a remote object. The hypermetropic eye, for instance, is so shaped that its refraction is not sufficient to bring distant rays to a focus in the retina. If the hypermetrope wants to see a distant object distinctly, he must increase the refraction of the eye by calling to aid the power of accommodation. Whether he looks far or near, the hypermetrope, as you now understand, must use his accommodation,

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and the ciliary muscle of the hypermetropic eye, therefore, is always in a state of more or less activity.

In another class of cases, the sight is confused by that peculiar state of unequal refraction called *astigmatism*; and in order to obtain a distinct image on the retina, the astigmatic eye makes an effort to equalize the uneven refraction by an unequal contraction of the ciliary muscle.

These constant and abnormal tensions of the ciliary muscle in the hypermetropic and astigmatic eye constitute one form of *eye strain*. And if those among you who have normal eyes place concave, spherical or cylindrical glasses of a low power before their eyes, they will get a quicker and better understanding than words can give of the effect of this eye strain on the nervous system. After a longer or shorter period, the vision becomes unsteady, one second being distinct and the next second indistinct; then pain is experienced in the eyes or in the orbital region, or all over the head; in some instances a general feeling of weariness and fatigue overcomes the patient, and in other instances the the patient is seized with nausea, dizziness, vomiting, palpitation and other symptoms which may occasion the belief that he is suffering from some serious cerebral affection, or heart disease.

Now, when all these and other distressing symptoms are relieved, promptly and permanently, by the use of glasses which correct the hypermetropia or astigmatism; when they return if the patient lays aside his glasses; and when they disappear again, as if by magic, as soon as he uses his glasses again, we may accept this as conclusive evidence that there is a direct causative relation between the eye strain and the nervous symptoms. And as this relation has been abundantly proven in the past, and is accepted as a fact by all modern writers on ophthlamology, I shall not consume any time with producing clinical records from my case books in support of it; for I shall need all the available time to speak of another

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form of eye strain which has but recently begun to be understood, and whose effect upon the nervous system is not half appreciated, even by many oculists. This second form of eye strain results from unusual muscular efforts to maintain *binocular* vision.

When we look at an object we must give our eyes such a direction that their visual lines connect the object with the retina, or, as it is often expressed, the visual lines must converge toward the object; for the slightest deviation of one visual line from this direction produces double vision. This convergence of the visual lines varies with the distance of the object; it is infinitely small if the object is far removed from the eye, but increases rapidly when the object is brought near to the eye. The movement of the eyeballs requisite for this ever-changing convergence of the visual lines are presided over by the straight muscles, particularly the internal and external recti, and under normal conditions, these muscles are so well balanced that the changes of convergence are executed without overtaxing the physiological limits of muscular energy. But whenever this equilibrium of the muscular forces is disturbed, the proper convergence of the visual lines cannot be maintained unless an excessive demand be thrown upon the one or the other ocular muscle. In the interest of binocular vision the muscles yield to this excessive demand, and this abnormal tension of the one or the other eye muscle to maintain binocular vision constitutes the second kind of *eye strain.*

For many years it has been known to oculists that in some persons the use of the eyes in reading was followed by severe headache and other nervous symptoms, because the proper convergence of the visual lines at such short distances could be maintained only by a strained effort of the internal recti muscles. It was thought the power of these muscles was lowered, *insufficient*, and the nervous complaints resulting from this "insufficiency of the internal recti" were called

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"muscular asthenopia." And in the most text books, even nowadays, you find the insufficiency of the internal rectus mentioned as the most prominent and almost sole cause of muscular asthenop .

But more recent investigations have shown that the symptoms of muscular asthenopia are not restricted to near vision, and that the muscular strain in binocular vision is not limited to the internal recti; it was found that most distressing asthenopic symptoms may exist in distant vision, and that the strained muscle may belong to the vertical, as well as the lateral pair. And furthermore, it was found that the "insuffiency of the interni," which had received so marked attention by the oculists, was not even the commonest of these muscular anomalies at all. In his latest work, Dr. Noyes (by the way, an excellent text-book), for instance, gives a classification of one hundred cases of muscular asthenopia, with seventy-four cases relating to faulty *externi*, and only eleven cases relating to faulty *interni*.

For the better knowledge of these muscular anomalies and their far-reaching influence upon the whole nervous system, we are especially indebted to Dr. Stevens, of New York, who has discarded the term "insufficiency" as often misleading, and substituted the name "heterophoria" (abnormal tendency). His views are expressed in the following passages taken from his book:* "When the eyes are directed to a distant object situated directly in front of the observer and at a distance of fifteen to twenty feet, the visual lines are practically parallel, and in this position there should be the minimum of nervous energy directed to the muscles of the eyes."

"If this be the case, the ocular muscles are said to be in a state of equilibrium, and in all other adjustments the changes of relations (of the visual lines) required are made with the least expenditure of effort consistent with the action." "In the absence of this state of physiological equilibrium

* Functional nervous diseases, etc.

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there may not be an actual manifest deviation of one visual line from the other, as in strabismus, but there is a tendency of the visual lines to part, but they are prevented from deviating, and held in such relations as to extend from the point of fixation to the yellow spot by a persistent and special effort."

"Binocular vision is maintained by the expenditure of a greater amount of force than is required when the ocular muscles are in a state of perfect equilibrium."

As I have said, Dr. Stevens does not endorse the theory of "insuffiency," because the apparently insufficient muscles often show full strength by the prism test, and because the results of the examination often are such that to explain them on this theory we had to assume an insufficiency of one muscle in distant vision, and an insufficiency of its opponent in near vision. This, of course, is a physical impossibility, and plainly shows that the theory of insufficiency is untenable, and that these disturbances must be explained by some different cause. Dr. Stevens is inclined to think the disturbance of the muscular balance has an anatomical basis; that it is due to irregularities in the insertions of the tendons. If one of the four recti muscles is inserted a little nearer to the corneal border than it should be, it would have the tendency to turn the eyeball a little toward its side when all the muscles are at rest. In other words, under these circumstances the visual lines would not be parallel during the state of perfect muscular rest, but they would show a tendency to convergence ("esophoria") or divergence ("exophoria"), or the one visual line would be higher than the other ("hyperphoria"). Now, as soon as one visual line parts from its fellow the image of the object is not received upon the macula of the deviating eye, but is thrown more or less to the side of it, and the patient is annoyed with double images, which, being close together or even overlapping each other, cause the greatest confusion of vision. But our eyes have, as it were, a great

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aversion to diplopia, and try to overcome it, if possible, by special muscular efforts. You may convince yourselves of this fact by placing a prism (base out) before one eye, and looking at a distant light, you will see two lights at first, but they will soon move nearer to each other and gradually merge into one light. This is effected by the internal rectus muscle of the eye, which, by a special effort, has turned the eye so much that the light image, which has been deflected from the macula by the prism, is again received upon the macula of the retina. And as your eyes correct the prismatic diplopia, just so do the eyes, with natural deviating tendencies, correct the resulting visual disturbances by muscular efforts. If the eye tends to converge (esophoria), it is the externus; and if it tends to diverge (exophoria), it is the internus; and if it tends to turn up, it is the inferior rectus muscle which must oppose this deviating tendency, and by constant activity, hold the visual line in the proper relation to its partner.

This constant muscular activity demands an expenditure of nervous energy which would not, in the absence of heterophoria, be required. In other words, heterophoria causes a waste of nervous power. And when you consider the continuous nature of this waste, and the amount of force at times required to regulate the action of the ocular muscles, you will admit that such persons must possess an unusually abundant supply of nervous energy to suffer no conscious annoyance from this everlasting excessive demand upon his nerve powers. Many persons are so abundantly favored by nature, and this explains that we often meet a person who, though showing a marked degree of heterophoria, suffers no inconvenience from the continuous eye strain, just as for the same reason we find hypermetropes who are not troubled with accommodative asthenopia. But when the supply of nervous energy is scantily measured out, or when the nervous vigor has been lowered by disease, mental work, anxiety, bodily fatigue or any other unfavorable influences,

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the supply of nerve energy is not sufficient for the ordinary physiological requirements of the individual and for the extra work required of the ocular muscles. Under these circumstances, then, the demand upon the nervous energy exceeds the supply, and, therefore, leads to nervous exhaustion, which manifests itself in different ways in different individuals. In one person it will manifest itself as frequent headache, or migraine; in another it will cause pain in the back, in the throat, in the stomach, in the ovaries, or any other form of neuralgia; in a third patient it will be dyspepsia, or constipation; in another vertigo and unsteady gait; in fact, there is none of the many functional nervous disorders, from simple headache to epilepsy, which has not been found to have its origin in this form of eye strain.

This seems a very extravagant assertion which few people are disposed to accept without strong and convincing proofs. For the connection between this eye strain and the nervous disorders is not always so palpable as it is in most cases of accommodative eye strain, where the patient is conscious of some difficulty of the sight, and knows that the use of his eyes brings about or aggravates headache, etc. But when, for instance, a person whose sight is always distinct can not go to the theatre but what he comes home with a violent headache, or when a merchant, who has to see to a large correspondence, has, day after day, more or less intense pain in the back of his head, loses his appetite and feels mentally weary and unable to concentrate his thoughts—no one would suspect that over-taxation of the eyes is the cause of these complaints. But when all medical skill has failed to make a favorable impression upon these symptoms, and when the headache is relieved, the appetite improved and the mental vigor restored by a graduated tenotomy of the superior rectus for the correction of a slight hyperphoria; when that other person has missed his after-theatre headache ever since his external recti were relieved of the constant strain to

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oppose the converging tendency of the visual lines; when a school teacher whose life had been made wretched by headache coming on every afternoon toward the closing hour, is permanently (at least one year, at this date) freed from her misery by the use of a pair of prisms to correct a few degrees of esophoria—these and similar observations, if repeatedly made, should, I think, convince even the greatest skeptic that there must exist a relation of cause and effect between this eye strain and these nervous affections.

Let us keep this relation in mind, and when a case of persistently recurrent headache, or any other nervous disorder, has baffled all our efforts; when we search for a palpable cause of the trouble, let us not overlook the eye strain as the possible source of the nervous complaint.

But, on the other hand, we must beware of going to the other extreme; we must not imagine we have discovered a panacea for all nervous ills in the relief of the eye strain; we must not lose sight of the fact that the "capacity of the eye muscles may be reduced in consequence of general ill health; that the symptoms of eye trouble may be simply the effect of remote disorders, and, as these get well, the eye troubles disappear." (Noyes).

The mere fact that we find a certain degree of heterophoria is not sufficient to prove the heterophoria the cause of the existing nervous disorder; to come to this conclusion, we must collect all the clinical facts and carefully consider the significance and importance of every symptom (local and remote). We must weigh all the evidence carefully and make absolutely sure the eye strain is the cause, and not effect or a mere coincidence, before we decide upon any severe measures for the relief of the trouble.

Treat every case on its own individual merit, and not on general theories, and success will be yours.

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DISEASES OF CHILDREN.

R. J. MITCHELL, M. D., GIRARD.

Diphtheria.

What I shall say on this occasion will be supplementary to my report of last year to this Society, and, therefore, confirmatory of the treatment of diphtheria advocated by me at that time. Since writing my last year's report, however, I have had an opportunity of further testing the therapeutic value of this treatment, and my success has been, as before, complete. Although I am well aware that nothing like absolute conclusion can yet be reached from the limited number of cases upon which these reports are based, yet I feel confident, under the circumstances of not as yet having had any deaths in cases under this treatment, that it (the treatment) has exerted a beneficial influence, and that it has, to a considerable extent, modified the result of the disease in the cases which have come under my care. As it is my belief that this disease is primarily always located in the pharyngeal cavity, and that the symptoms are mild and the deposit limited in area in its first onset, and that the nasal and laryngeal varieties and the so-called malignant form of the disease are only later phases of its development and the natural result of the septic condition existing in the faucial region acting through the medium of circulation and respiration, I therefore divide the disease into two stages, primary and secondary. The first, or primary stage, dates from the beginning

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of the first symptoms, viz.: fever, anorexia, sore throat, swelling of the cervical glands, together with the characteristic patches in the throat, when, if the case has made no progress towards recovery, a new formation of deposit is thrown out upon fresh surfaces, which extends either upwards into the nasal cavity and covers the palate and roof of the mouth, or downwards into the larynx and produces croup. It is the first stage of the disease that is important to the physician in point of treatment, while the second stage, as every one knows well by experience, offers but little to hope for in this respect. I therefore again emphasize the importance of early diagnosis before the system has become too much affected by the poison, as the disease in its incipiency is, I believe, strictly local, so that by early and energetic treatment, with properly selected remedies, it can be controlled and its mortality greatly reduced.

Diphtheria is, according to the latest research and generally accepted opinion, dependent upon a specific germ for its origin, known as Loefler's bacillus, which finds lodgment on or in the mucous surface of the pharynx, and does not, as we are told, enter the circulation, but elaborates a ptomaine or poisonous product that does. It would, therefore, from a theoretical point of view, be but a comparatively easy matter to destroy this death-dealing organism with some of our numerous never-failing germicides; but practice does not prove what theory suggests for treatment of this disease in this case, as in some others, and we have been doomed to disappointment, for the whole list of parasiticides has been well nigh exhausted in searching for a sure remedy. Many of the poisonous drugs have been administered internally as well as locally, and some of the most active of these germ-destroyers have yielded the poorest results, for the reason that if they be used in strength sufficient to destroy the microbe, situate in an open avenue to the stomach and protected by a fortification of its own building, the exudate, would poison

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the patient, and I am led to believe that the best results in the treatment of this disease will never be obtained from this class of remedies, and take pleasure in attempting to prove the usefulness of a harmless treatment which I have employed for the past eleven years exclusively with satisfaction, which consists of the following: Quinine, gr. xxx; acid hydrochloric, gtt. xxx; water, oz. j; to be applied with an atomizer to the patches in the throat every two hours, using three or four compressions of the bulb, taking pains to expose the diseased parts thoroughly and allowing no drinks to be taken for one-half hour afterwards. Quinine, gr. xx; tinct. iron, ʒiij; aquae ad. ʒij; teaspoonful every two hours, followed by alcohol diluted to $\frac{1}{6}$ or whisky diluted to $\frac{1}{8}$, to wash it down. The use of tinct. iron and alcohol for this purpose seems to have met with general favor, while the use of quinia locally as an antiseptic has been quite limited, though as far as I can learn it has yielded good results to all who have thus employed it. Professor Rochester has been referred to as authority for the local use of this drug in this disease. He employed it by insufflation, two grains every two hours being blown into the throat, with good results. Dr. Cleveland speaks favorably of its use in this way. Dr. Burghardt, in the * *Vienna Medicinische Wochenschrift*, of Oct. 5, 1889, speaks highly of the use of quinine and sulphur, equal parts, by insufflation, in the treatment of diphtheria, three grains being blown onto the diseased parts after cleansing them with a gargle or a drink of water, making application but twice a day, and recommends this treatment as being especially adapted to young children, on account of its ease of application. He allows nothing of the nature of food or drink to be taken for an hour afterwards, and further states that since 1882 he has treated in this way thirty-three cases in patients from one to twenty-four years of age, without a fatal result; whereas, by other methods, he has lost almost three-fourths

*College and Clinical Record, 1890.

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of his diphtheria patients. Between the insufflations he gives tincture of iron, wine and brandy as tonics, and if there is much blood-poisoning, he gives large doses of iron, ergot, lemon-juice, etc. All of his cases were seen early in the attack. He was led to adopt this treatment from observing the effects of sulphur on diseased vines in destroying the fungus oidium vitis, and knowing the germicide as well as the tonic properties of quinine, the happy thought struck him to combine them for this purpose, and the combination seems to be a good one, as the results show; but to which element of this combination the results are due, he does not explain, nor will I attempt to say, further than that for me, quinine without the sulphur has done as well, as my results also will show. In support of this treatment, I submit the following cases, all of which were followed by the characteristic sequela, viz., paralysis:

Case first—Ethel D., age 6, was seen April 15th, 1889. She had been suffering a day or two with what was supposed to be a bad cold, having fever, sore throat, etc. Examination showed throat flamed, no patches on the tonsils, severe swelling of the cervical glands and painful deglutition; but on my return the next day patches were found on the tonsils. She was put on the quinine spray every two hours; solution of quinine and iron every two hours, with the diluted whisky, for five days, when the throat cleared, and the solution of iron and quinine was then continued till convalescence was established. About three weeks after, she was brought to my office on account of difficulty in swallowing liquids and in speaking so as to be understood. As her appetite was good and general condition improving, she received no further treatment, and recovered from the paralysis in about six weeks.

Case second—Lucy McL., age 10, was taken with high fever and severe sore throat the day before I saw her, while visiting in a neighboring town, and when I saw her, August

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23d, she had fever, painful deglutition, swelling in the angles of the jaws. Examination of the throat showed a thick, white patch of quadrilateral shape located on the anterior aspect of the tonsils and uvula, extending upwards to the edge of the palate, binding them together in a solid mass, obscuring them entirely from view. She was put upon the treatment immediately, and as she could expose her throat well without the use of a tongue-depressor, being old enough to fully realize her dangerous condition and the importance of treatment, she got the full benefit of the spray, together with the iron and alcohol. There was no change until the fourth day of the treatment except the subsidence of the fever, when the thick patch of membrane loosened at its upper edge and hung forward like a mirror from a wall, vibrating with the respiration, which was made wholly through the mouth. I made slight efforts to remove the partially detached membrane, and finding it impractical to do so, left it, and on my return the next day I found it gone, but replaced by a new and much thinner formation, which, under the continued use of the spray, disappeared thirty-six hours later and the throat became clear. The case progressed favorably under the quinine and iron solution. About three weeks after my last visit she called at my office, complaining that she could not see to read, and on trial I found that she could barely read the large letters from the heading of a newspaper. I prescribed a pair of No. 7 convex glasses to correct the error of refraction. The power of accommodation gradually returned, so that at the end of six weeks vision was apparently normal.

Case third—Johnny McL. was taken about a week after his sister Lucy, and as the parents had become expert in the application of the treatment on the girl, I was not called until the boy had been under treatment about three days after the attack. I found the characteristic symptoms present, or had been; fever subsiding. On inspection of the throat, a de-

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posit was seen, limited entirely to the uvula, beginning at its base, covering its full width, extending downwards, its free or detached lower end of band or ribbon shape, reaching the vocal cords, as was evidenced by the complete absence of phonation. The tonsils and other parts of the faucial and oral cavity were clean and red. Treatment continued till the seventh day, when the throat cleared up and the voice immediately returned. Paralysis of the faucial muscles made its appearance two weeks later, which lasted about six weeks. He was very weak when convalescence began, and made a slow but complete recovery.

Case fourth—M. W., age 7, the second of three cases in the family, August 7th, 1889. Symptoms regular; fever, sore throat, etc.; deposit confined to the tonsils. Treatment begun early. She could not take the spray successfully, on account of inability to bear the use of the tongue depressor, which caused her to retch and vomit her food, and I had, therefore, to rely upon the quinine, iron sol., which I gave every two hours, with plenty of whisky, till the tenth day, when the deposit disappeared, and afterwards three times a day till convalescence was established. Her throat muscles became paralyzed, so that it was next to impossible for her to swallow liquids, and it was very difficult to understand her when speaking. The external rectus of one of the eyes became affected, and strabismus prevailed for a month. She was obliged to stay out of school for three months on account of her inability to speak distinctly. She made a very slow but complete recovery.

In all of these cases except the first the urine was examined and found to be albuminous. I will not encroach further upon your time to give in detail the history of the other seven cases, for I think from those reported you can fully understand their nature, as well as the nature of the epidemic prevailing throughout the country at that time, of which they form a part. These patients range in age from

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3 to 14 years. None of them were followed by sequelæ, but were, nevertheless, well-marked cases of diphtheria. Two of these cases, age 3 and 14 respectively, were quite severe, the deposits on the tonsils being extensive, together with decided swelling of the cervical glands and albuminous urine. The eleven cases included in this report occurred between the dates of April 15th and September 16th, 1889, as follows: One case in April, one in May, eight in August and one in September. It affords me pleasure to report to you the successful management of these eleven cases which it has been my good fortune to see recover under the local use of quinine, aided by tincture of iron and alcohol, to which I will now add the twenty-one cases reported last year, giving me a total of thirty-two cases treated by this method without a single fatal result, against a mortality of over 70 per cent. of the cases treated by me by other methods, and I am therefore forced to conclude that this mode of treatment will compare favorably with any other, and is deserving of a more general recognition and further trial. I have endeavored in the foregoing to give you the result of my experience in the treatment of this disease in the manner set forth, and have tried to confine myself to what I believed to be the truth. How well I have succeeded, time and experiment will determine. But it is my earnest wish that whoever may be induced, through the need of something better, to make use of this treatment will meet with equal success.

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DISEASES OF CHILDREN.

KATHARINE MILLER, M. D., LINCOLN.

Vaginal Irritation as a Cause of Bladder Symptoms in Young Girls.

More common even than enuresis among girls is a form of irritability of the bladder, manifesting itself chiefly in an inability to retain the urine in the normal manner. It is often complained of in school girls, who are obliged to leave the room between intermissions, in order to pass the urine, else the bladder, spasmodically contracting, empties itself in spite of every effort of restraint. Even with the promptest attention to its demands, these girls are occasionally subjected to the mortification of wetting their clothing. The condition is not always troublesome at night, and rarely, perhaps, does the child fail to arouse from sleep to empty the bladder when required. Oftentimes no complaint is made of any other symptom than this annoying vesical irritability. Relief is sought on account of the inconvenience, as the child can not go away from home, or, for any length of time, place herself under any circumstances where urination would be impossible with propriety. The condition has seemed to be more common at the age of six to twelve or fourteen years, but may, if untreated, persist indefinitely.

The urine is generally normal; there is no pain or smarting in urination, and very often no symptoms to point to any inflammatory disease of the region, nor to suggest the need of an examination of the parts; yet without an examination, the real difficulty is overlooked, and internal remedies yield but disappointment to patient and physician. An examination will promptly disclose an extremely sensitive and

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hyperæmic condition about the vaginal orifice, and further investigation, if tolerable, will show the extension of this tenderness within the vagina. Often this latter investigation can only be made by the use of an anæsthetic, not because of the small size of the parts, but because of their extreme sensitiveness. It is not my custom, therefore, to attempt more than an examination of the external surfaces. In more than one case the discovery of soreness has been a surprise to the child. Many girls of eight to twelve are in the habit of attending to their bath themselves, and unless specially taught, which they seldom are, there is no careful cleansing of the genitals. And in the absence of the accidental contact of some foreign body, the child has not her attention called to the tender condition of the parts.

The disease is essentially chronic and may begin in babyhood, attracting no attention unless by way of punishment for supposed careless soiling of clothing, after years of discretion in such matters has been reached. The cause of the difficulty must be surmised, as there is rarely any history of traumatism. My supposition has been that there was at some time in the early childhood considerable uncleanliness of the parts leading to irritation. We all know how careless many nurses, and even mothers, are, as to the thorough cleansing of the genitals of babies, and in children who have acquired cleanly habits it will be found the exception, I believe, for the parts to be really carefully cleansed. There is a feeling that it is improper, as well as unnecessary, to part the labia and cleanse the inner surfaces. Thus little girls, whose toilets are otherwise most carefully made, may suffer neglect in this regard. Often, too, a small part of the seat of the drawers becomes soiled with the slight amount of urine adhering to the vulva after urination. This, rapidly decomposing, is, in the movements of the child, rubbed against the vulval surfaces and may in some cases cause inflammation. Nor is it impossible that ordinary catarrhal attacks, to which so many

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children are subject, may affect the mucous membrane of the vagina, as well as of the respiratory organs. Occasionally, masturbation may be the cause, but it is oftener, in my opinion, an effect; the local hyperæmia, giving rise to uneasiness, possibly even to a sexual excitement, leading to the handling of the clitoris in those untaught as to the evil of the practice, as is the case with most children.

Whatever the cause then, it will usually be found to be so far in the past when advice is sought, that nothing definite can be learned, and the treatment must be our chief concern. This must, of course, be directed to the removal of the vaginitis, when the bladder will recover its tone. For this purpose the most perfect cleanliness must be enjoined. Not only is careful washing needful, but warm hip baths are of value. It is impossible, almost, to use any active astringent remedies, but soothing powders may be dusted on, the vulva being opened as far as possible; and children old enough to understand the aims of the procedure will generally submit to the application at night of a small pledget of cotton wet with a healing lotion containing pinus canadensis, hamamelis, carbolic acid or similar remedy, diluted with boiled starch. As soon as the external surface is relieved sufficiently, the treatment should be continued with the use of vaginal injections of warm water, followed by a small quantity of some lotion similar to that used externally. In giving the injections, it is doubtless needless to say that a very small tube should be used. The rectal tube for infants, which accompanies most syringes, will be available, and the medicinal injection may be given with a small, hard-rubber piston syringe. If the mother is a woman of intelligence, it is better that she, rather than any one else, should give the necessary treatment, with only an occasional visit to the physician that a more active application may be made at intervals, or that progress, or lack of it, may be noted. With girls at, or beyond, the age of puberty, methods more like those

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employed in ordinary gynecological practice may of course be employed, but even here it seems best to spare such a girl as much as possible of the mortification of frequent local treatment by the physician. It will be noticed that, although the vesical irritability is the leading symptom, I have not mentioned the use of remedies addressed to the bladder. It is seldom necessary, but often advisable, to do so. If there is any abnormality of the urine, as excessive acidity, it should be corrected. Where the urine is normal, as it generally is, rhus aromatica has proved a valuable aid to control the habit of irritability of the bladder and relieve the symptom till the cause could be removed. The fluid extract has proved efficient in my hands, and it seems, in some cases, to be free from the objections to belladonna, which has been so much used in such cases. Owing more to the difficulty of using efficient local treatment, caused by the small size of the parts and the unmanageableness of the patient, than to any other factor, the cases are liable to require a somewhat protracted observation, but if proper treatment be persevered in, a favorable prognosis may be unhesitatingly given.

DISCUSSION.

DR. J. M. G. CARTER:

I was very much interested in the paper. It seems to me that some of the points made are constantly in the minds of the physician, but should be there in such shape as to make him bring them prominently before the minds of his patients. One of the most important points is cleanliness. We should take care of the children. I am reasonably certain that many of the local diseases that I have observed in my practice among children—and it is probable that many of you have observed the same thing—have occurred from lack of cleanliness, and as suggested by the essayist, it is not usually supposed that it is absolutely necessary that the genital organs should be carefully attended to. Parents should be impressed with the idea that it is more necessary that that part of the body of children should be kept clean, because diseases are more likely to occur from neglect of cleanliness of those parts than any other part of the body. The author of the paper brought out some points that we should take home with us. They are practical, and we should strive to impress them upon the minds of both parents and children.

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WHAT SHALL WE DO WITH OUR INSANE?

E. INGALS, M. D., CHICAGO.

I am induced to bring this subject to the notice of the Society by the hope that others—abler than myself—may so elucidate it as to draw public attention more earnestly to its consideration and thus help to commend the interests of this unfortunate class of our citizens to the intelligent and generous care of the people of Illinois. The subject is trite; for in every nation that has reached a high plane of civilization, insanity has engaged the attention of the many benevolent minds whose thoughts have been directed to the solution of the more important economic questions in which the general welfare is involved. But public opinion can only be developed and directed by constant, patient, and almost painful iteration of statement.

I shall quote but few statistics, nor shall I dwell on our methods of caring for the insane, much less shall I censure them. Illinois deserves great praise for the care she has given to her dependent wards. These are the deaf, the blind, the speechless, and the insane. In the last class many criminals should be included. Indeed, there is reason to doubt if any criminal is possessed of a really sound mind. Reason, sight, hearing and the power to articulate are among the cardinal blessings that fall to the inheritance of man. Those who are in the possession of these gifts should, in gratitude—if for no other reason—watch with tender solicitude over the welfare of those whose minds wander in anguish amid their own ruins, whose sightless orbs are ever veiled, whose tongues are mute and whose ears are closed to all the music of art and the melodies of nature. While I allude in passing to all of these classes, I shall limit my observations chiefly to the insane; but the principles that should govern our actions in dealing with he insane, will apply with equal force to all the others.

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We do not know how many insane persons are in Illinois, but ten thousand would probably be a near approximation to the number. This will not vary greatly from one in each three hundred and fifty of our entire population. The annual increase may safely be assumed as about four hundred. It should be borne in mind that this dire affliction falls upon its victims, in most cases, without any fault of their own, and therefore they are not accountable for it. It is thought by many that the insane percentage of our population is constantly becoming greater.

The manner in which society is now organized unquestionably tends to the increase of insanity. The over-anxiety to obtain wealth and social position, engenders the keenest and most unremitting competition in every pursuit of life; the means we employ to abridge time and space; the coursers of the ocean, the railroad, the telegraph, the telephone, the ever laboring press, have brought the entire world to every city and hamlet, and even in rural places there is hardly an escape from the ceaseless din and turmoil so well calculated to exasperate the nervous system and to dethrone the powers of reason.

The changed and changing relations of the sexes, too, is not without its influence as a factor in bringing about this result. The life of woman has ceased to be entirely domestic. She now enters into many avenues of business that have heretofore been thought to belong exclusively to man. She appears as a preacher in the pulpit, as an attorney in the courts, as a physician in prescribing for the sick, on the stock exchange, in the marts of commerce, in the political arena and in a multitude of manual industries. Some philanthropists exclaim with exultant emphasis that woman is escaping from the tyranny of man. While this may be true, it is not less true that she is passing—in some degree—from his protecting care.

The records of our divorce courts seem to indicate that domestic infelicity is oftener found than when we lived in a more tranquil state, and when society was subjected to a less heated ferment. If these things can truthfully be said of the parents of the race, a physiologist would easily believe that their progeny would be born with physical organizations more subject to mental perturbations than if surrounded by tranquil social conditions. If this be so, then is society in some

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degree responsible for this grave misfortune that afflicts so many of its members.

I have said that I have only words of commendation for the acts of our legislators in providing, as they have done, for our State charities. I praise them for this, for it has been suited to the conditions in which we have been; but our conditions have changed and are constantly changing. Our State is older, it has more wealth, and more people, and the greater intelligence that comes from experience and observation, and we should now make our acts to conform to these new conditions. The report of the Board of Public Charities of Illinois for 1888 gives—including the feeble-minded—three thousand nine hundred and twenty-seven inmates of our State charitable institutions. If the estimate of ten thousand, as the number of insane persons in the State is not too great, six thousand are left to be cared for in families, and in county and private institutions. For many reasons it would be better if all of these could be gathered into asylums supported and controlled by the State. This disposition should be made of all insane persons whose friends desire that they should be thus cared for, or when judicial bodies decide, in any individual case, that the safety or general good of the public would be promoted thereby. It would be both just and politic, that the State, out of its abundant resources, should provide suitable asylums whose open doors would invite all such unfortunates to take shelter within their protecting walls. These must be cared for; it is a burden from which society, either in a public or a private way, cannot escape, and from which, I am sure, we would not escape if we could. Were these all to be supported from the public treasury the figures would be more startling; but the aggregate expense would be less than now. Any large work can be more economically and efficiently done when it is thoroughly organized, and is placed under the direction of capable and experienced persons, than when it is committed to the desultory efforts of those who are unfamiliar with the management of such enterprises, and wanting in adequate means to carry them forward. A single insane person cared for in a private family will, to a large extent, absorb the labors of that family, and must effectually destroy its peace and happiness. To remove an insane person from a private family is

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not only a benefit to that family, it is also an act of humanity to the patient.

Many who now become chronically insane by being thrust into poor-houses, jails, and places of county or city detention—I will not call them asylums—neglected, overcrowded, and lacking competent attendants, would doubtless be restored to health if placed amid proper surroundings, and in care of those who, by their attainments and experience, are fitted properly to minister to their needs. It is better, too, for the public that insane cases should be kept in seclusion—so far as the good of the patient will permit. It is not unlikely that observing the actions of the insane may cause those who are predisposed to the disease, unconsciously, and involuntarily, to imitate them. It would be well if all county asylums could be abolished, and surely the detention of the insane in poor-houses and jails should be discontinued. All who now fall into such places should be cared for in State institutions. New asylums should be established at points best calculated to accommodate the people, and where lands are inexpensive so that ample grounds could be secured for each. In a progressive State, such as Illinois is, it is generally wise to plan on a scale larger than present wants indicate to be necessary. This would cause large additions to our present disbursements for the charities of the State.

These increased demands on the treasury would require a corresponding increase of taxation. The open and obvious collection of revenue from a people is always unpopular, yet liberal taxation is best for a State, if the burden is made to rest evenly on all capital, and if the revenue collected is wisely and honestly expended for the public good. The public estate differs only from a private one in being larger, and having many copartners. The experience of every day teaches us the wisdom of expending money freely for the development of the individual estate, and the free use of money for the care and good of those who are dependent on it. The obtaining of money by honest labor and the husbanding of it by thoughtful care, help to develop the most valuable qualities of the mind, and require the exercise of the cardinal virtues, as industry, frugality, probity and temperance. We cannot place too high a value on the possession of these virtues, nor will we be likely

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to overestimate the importance of having a necessary amount of money; but beyond what is requisite for the independence and safety of the individual, the greatest good it brings to its owner, lies, not so much in its possession, as in the uses he makes of it. Insanity is a malady that falls alike on the rich and the poor, but the duty of caring for its unhappy sufferers should be placed mainly on the rich; but if such cases are left to be provided for in the family, the burden will fall with greatest weight on the poor, who should be exempt from it. Illinois is a rich State, and its wealth is increasing with great rapidity. It is favored by nature above other lands. It has a soil of surpassing fertility, a healthful and invigorating climate diversified by a wide range of latitude; a great lake, floating the commerce of a nation, is on its border; it is drained by noble rivers, and myriads of smaller streams give freshness and verdure to all its acres; beneath its surface are hidden inexhaustible treasures; it has opulent cities and numberless homes that are filled with happiness and thrift.

Surely, a people so blessed, should, in common gratitude, have warm hearts and a generous help for that portion of their fellows who are bereft of reason. The State ought, also, to deal with great liberality with the deaf, the dumb and the blind. We should extend the hand of helpfulness to the criminal classes. We should erect a number of commodious and pleasant prisons, in which persons convicted of crimes against society could be kindly treated, and secluded from the world by long sentences and employed in useful labor. Their lives would be happier, in this condition, than when left at liberty to follow their criminal instincts. Were the members of this class not the subjects of such repeated re-arrests and trials as they now are, our courts of justice would be disburdened, public expenditures for their maintenance much lightened, society would be more peaceful, pernicious examples would be removed from public observation, the ranks of criminals would be less recruited by heredity than they now are, and we would escape a political menace that is not without danger.

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THE LAWS RELATING TO THE INSANE IN ILLINOIS; THEIR DEFECTS AND DESIRABLE AMENDMENTS.

JUDGE RICHARD PRENDERGAST, CHICAGO.

It was with considerable diffidence that I accepted an invitation to appear before this learned body of specialists to offer any remarks on a topic with which I have but a layman's acquaintance. But, notwithstanding all that has been done by the State of Illinois for the unfortunate of her people known as the insane, there remains very much to be done, it seems to one acquainted with the subject, before the people of the State can justly claim they have done right by the insane. It is needless, of course, to point out to this body that the insane are such largely because of conditions that preceded them in point of time; defects, the seeds of which were sown in other generations and times. Many, of course, are insane as the result of accident, abuses practiced by themselves, intemperance of various sorts; but I think you can safely say that, while some sane men may seek suicide, others addict themselves to excesses of one kind or another, it has not yet been recorded that any man desired to become insane. The paper that has been read, as well as the remarks of Dr. Dewey, state that a very small proportion of the insane, even within the limits of the State, are within the care of the State. Now, a very important inquiry would seem to suggest itself at this point: What right has the State to tax people of the entire State for the support of institutions caring for but a third or one-fourth of the insane? Does not such a system perpetuate favoritism? Why should some of the insane be placed in asylums and others left to the bleak conditions of county institutions? I am inclined to think that what is true in Cook County prevails, to a greater or less extent, throughout the entire State, and that those who are the strongest in friends, in acquaintance and influence, are the ones that are selected for care in the State asylums. In our county, a very large proportion of the insane are confined—and have for the last seven or eight years, to my knowledge, been confined—in the county asylum. Our quota

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—the number that we are entitled to send to the State asylums—has long since been overdrawn; in other words, we have overdrawn our account at the State asylums.

All persons should have sufficient knowledge, not only of the situation of the insane in county institutions compared with the situation in State institutions, but sufficient knowledge to bring about admissions. That class of persons, with insane relatives and friends, are enabled to place their insane friends, to a large extent in the State institutions, because of their knowledge and skill and strength of various kinds, leaving the abjectly poor to the county asylums. It would seem that, to a certain extent, the very reverse of what *ought* to be, *is*. It would seem to me that the great State of Illinois should extend its charity and reach for the most abject of the human race and place them in the best comforts and under the best surroundings that are within its power to furnish. I believe that all of the insane should be under the control of the State, but I couple that with the very important addition, that if such immense institutions as the Cook County Asylum be placed under the control of the State, it should be under conditions that would remove permanently and effectively the evils which result in the condition of things that have made the Cook County Asylum, in the past, a reproach to the honor of the people of the State. I refer to politics. Happily, at the present moment the condition of the Cook County Asylum is not to be compared, it is only to be contrasted, with the condition of but a few years ago; and it is, seemingly, a matter for surprise, as well as for congratulation, that such is the fact, when we remember that the laws of this State commit a thousand and over of the insane that are in the Cook County Asylum to the custody and control of a body of men—County Commissioners—who are selected and elected without any reference whatever to their capacity for the discharge of this trust reposed in them by law. This is a fault for which the people are to blame, not the County Commissioners. It is a law of the State that the terms of the County Commissioners in the county of Cook are for one year, and one year only. These men are put forward by what used to be my party, and, I suppose, what continues to be your party, both sides. They are put forward for their strength. When the political conventions are held, they are look-

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ing for winners at the polls, not for persons who are expert or skilled in the manner of caring for the insane; as a result of which, the people of this city were aroused, and called a halt in the sins of infamy that were being perpetrated— cruelty and wrong to the most helpless poor, a condition of things such as we would expect to find only in novels or in exaggerated reports of what is found in benighted countries. We have an institution in this county which is a fire-trap. If a fire starts in it, the patients will undoubtedly be burnt to death. This is not a statement made for the first time. It has been judicially determined on a hearing in court and on the application of a young girl who was in that asylum. An investigation into its condition was had only within the past year, and I believe that girl was taken, by order of the court, and transferred to the care of Dr. Dewey, at Kankakee, because of the numerous defects in the conditions that surrounded her at that asylum, and every patient would have been taken out by me and put in institutions if there had been room for them.

Attendants selected—are they selected because they are worthy of being selected? When I speak of this, I speak of what I believe very largely has come to pass throughout the State. The individual who was in charge as a physician of the Cook County Asylum during all these years, when vermin ate the flesh off the bodies of the patients, who permitted females to be outraged, etc.,—that individual was on the slate to be appointed again last December in charge of that institution, notwithstanding the judicial determination that had been made of the condition of things under his management. The slate was broken. I was denounced at the time because the slate was broken, for interfering in politics, but that thing may happen after the next election, and evils of a similar nature, though not of so great a magnitude, may have been in other county asylums throughout the State, for aught I know. Therefore, I say, the people of the State of Illinois should seek to establish State asylums for all of the insane, and not for the favorite ones; establish them under such conditions as would prevent the administrative power, which, of course, is essential in all institutions, from being turned to any political use or advantage. I think it is time that the State asylums should be pictures of the consciences of the people of the State. It is but a few years since insane women were con-

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fined with the criminal women in the county jail, and, of course, the criminal women in a great city of this kind—you may imagine what they are. You can imagine the condition of those who are unable to find bail. It was in the companionship of these people that the State of Illinois committed tender and insane girls—matrons who were deprived of the use of their reason, restrained, and unable to remain at their homes. Insane men were put in the boys' department of the county jail, with the little miscreants that are too young for the penitentiary, but too old for any other place. The insane were the objects of ridicule and abuse, and the butt of all sorts of jokes for the young fellows. That state of affairs in the city of Chicago, with a vigilant press, with a pulpit eloquent, with an intelligent people, and with the enterprise that is rearing up rapidly a great metropolis with miles and miles of splendid and imposing architecture—think of it! My experience in a court which sends 500 or 600 insane persons every year—I believe it is fully that number—to the insane asylums of the State, leads me to say that the State of Illinois, for some reason, has not risen to the full discharge of its duty.

I understand that there is some discussion in the medical profession, and has been for some time, as regards the propriety, or value, of jury trial to determine the question of insanity. I agree that in very many cases the bringing of the insane person before the court and jury has a tendency to interfere with, or delay, recovery. It is quite possible, and, of course, I would prefer very largely to have the opinion of medical men on that question; but we must look at the matter from a practical standpoint. That is the law now, and if a proposition is made to change the law, we must examine the question, to see what the legislature would be likely to do on the proposition. I am inclined to think the legal profession, which has so much to do with the defense of human liberty, even when that human liberty is sought to be relatively interfered with by the State because of delinquency, as well as the common sense of the people, would be opposed to a change in the matter of jury trials, because of the liability to abuse of any other system. The jury trial for the insane is simply established as a precaution against wrongdoing, to prevent the ill-advised, to resist the fraudulent and criminal placing of persons not insane under custody. I am inclined to think,

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however, that a practical amendment to the law could be found that would go side by side with the jury trial; and that is to establish in such large cities as Chicago, a hospital for preliminary detention without a jury trial, and to permit the Superintendent of State asylums to accept patients on the order of the county which might have a hearing before a judge in court, or in chambers, or in his office. I believe that the law is construed to be that the Superintendents of State asylums are not permitted to accept patients without a jury trial. At least, that is the practical construction placed on the law in this city. Such a preliminary place of detention without trial would be of manifest and great advantage. It ought to be away from the jail. In that hospital for preliminary detention should be the court, and it would take but a little while for the movement of the insane from their homes to the place of temporary detention, and make the court seem more of a medical inquiry, and less a judical one. I need not dwell, in such a presence as this, I imagine, upon the great advantage it would be to have a commodious place, well fitted with all the appliances for the cure of the insane, where persons who can be cured within a month or so could be placed.

The cost of establishing State institutions for the accomodation of all the insane in the State is so large that I have very little hope indeed of seeing the legislature pass a measure, because in Illinois we have no tariff. There is no surplus, and the members of the legislature only respond to a greater or less extent to the ideas of economy that prevail in the districts and among the people that elect them. What follows? The medical profession and all other parties whose attention has been called to this subject have their duty increased to see to it that the local institutions are made better. In this county it should be the duty of the medical profession to look into this matter. I would respectfully suggest that none but the best physicians be placed in charge of all the institutions for the insane, both permanent asylums and places of preliminary detention—physicians that will best represent you in every sense of the word, and from every standpoint be permitted to be appointed by the County Board. You have scarcely any idea of the force of public opinion upon public bodies. If the medical profession of this city puts its veto upon any medical appointment before it be

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made, it will not be made. Why? Let us look at the matter from the standpoint of votes alone. The doctors are voters—at least they ought to be, and a body of men having their weight and acquaintance reaching into the thousands will necessarily have great power in the political world if they undertake to act unitedly. In the absence of reasonable expectation, which I for one do not entertain, that the legislature will in the near future establish sufficient State accommodations for all the insane, I submit to the medical profession that if they unite upon this proposition, never again will there be permitted in the Cook County Asylum the horrors, the wrong, the cruelty, baseness, and wickedness practiced there under a Superintendent that was made and authorized by former County Boards. With this thought and with this suggestion I have to thank you for your attention and invitation.

SOME OF THE DEFECTS AND DIFFICULTIES TO BE OVERCOME IN ORDER TO SECURE WHAT IS NEEDED.

J. C. Corbus, M. D., Mendota.

I did not come here so much to participate in this discussion as to listen. I left my home because I saw that my friend, Dr. Ingals, was to read a paper on the care of the insane. I realized keenly that it was a move in a direction that would have its influence in the care of the insane of the State.

I have served for the past seventeen years in the capacity of Commissioner of Public Charities of this State, and have necessarily given the care of the insane and the management of our insane hospitals a great deal of thought, feeling the keenest welfare in this class of unfortunates.

We, as a Board, have been disposed to find fault somewhat with the little interest seemingly taken by the medical profession, more particularly in their society meetings, in the management of the insane hospitals of the State, both public and private; but when

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you take into consideration how little attention has been paid to mental diseases in our American colleges, this lack of interest is probably not to be wondered at. The rapid increase of the insane, and the large outlay of money that it requires for their care, give rise to one of the great problems that confront society to-day. How this expense can be lessened and yet secure the care that this class of unfortunates requires, no one ought to be more competent to decide than the members of the medical profession.

Hence, the reading of this paper by Dr. Ingals, and the discussion of the subject by this Society, will be highly appreciated by the State Board of Charities, they feeling that it will result in bringing to their aid an influence that will go far in shaping future legislation in the construction of hospitals and the management of the insane of the State.

The State Legislature has realized the growth of insanity in the State and have, from session to session, made large appropriations for the construction of new hospitals and the enlargement of those already built. The Board of Charities has endeavored to shape this legislation, and has, no doubt, exerted an influence, but not to the extent they would have desired, or the recent additions to three hospitals would not have been made. I have reference to the institutions at Elgin, Jacksonville and Anna, for the Board fully realizes the inability of the superintendents to give the attention to the inmates that they require, when massed in such numbers, the size of the institutions prior to their enlargement being greater than should fall to the lot of any one superintendent.

The superintendents are selected in consequence of their professional standing in the treatment of mental disease (or supposed to be); but the truth is that their time is so taken up with their duties outside their profession that it would make but little difference whether they had any attainments in this direction or not. The executive duties that one of these hospitals demands; the supervision of a large farm; the acting as purchasing agent for all the requirements of one of these large institutions; the reception of visitors, etc., leave the medical duties, which would be considered the most vital, in the hands of subordinates, often young men from college, without experience and that feeling of responsibility that comes only with years.

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This increase of the size of our State institutions has been brought about mainly through the concentration of influence in the legislature of the localities in which State institutions are located, for the purpose of having larger expenditures of money for their support—large amounts being expended in localities where they are situated—without, in my opinion, taking into consideration the convenience of the citizens of the State, or the welfare of the unfortunates immured within their walls. What we really do want is smaller hospitals, and more of them, scattered over the State where they can be reached with as little inconvenience as possible to the public; less expensively constructed buildings, built solely for the convenience and comfort of the inmates, with men of experience in the medical profession to treat their mental infirmities and supervise their wants.

In concluding, I would like to say a few words in regard to the commitment of the insane. A law that is a disgrace to our statute books—the evil resulting from the law more noticeable in the country than in the city, compelled, as we frequently are, to take a delicate female patient twenty or thirty miles to the county seat, to be a subject of inquisition in the presence of a crowd of hangers-on about a court room, listening to her erratic talk, which is probably absolutely foreign to her nature (the friends accompanying her pained and astounded to the last degree at the evidence of the mental wreck)—is an outrage that should not be submitted to any longer. The trouble in effecting a change of the law has come principally from the young attorneys in the legislature claiming the individual must not be deprived of his personal liberty without the process of law that the present statute prescribes.

Although, when a circular letter was sent to the probate judges of the different counties in the State, asking their opinion in regard to the working of the present law, I think there were but two who were not in favor of its repeal.

If there is an earnest effort put forth in the coming session of the legislature on the part of the medical men of the State, I have not any doubt but what we will secure the repeal of the present law and substitute in its stead one more in accord with the enlightenment of the times.

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WHY THE STATE SHOULD CARE FOR ALL THE INSANE.

RICHARD DEWEY, M. D., KANKAKEE.

I suppose that if the question, which is the subject of discussion this evening, were asked the people of the State, What shall we do with our Insane? there would be a unanimous response from them—provide for the insane in such a manner that they shall be well cared for, all of them; provide for them so that all of them may have a chance to be cured of their malady, or so that those who are destined to remain in that unfortunate condition the rest of their lives will have their existence made as bearable as it can be. There is evidence that the people of the State desire that this unfortunate class of people shall be cared for. They, however, expect that the work should be done without extravagance, and with great efficiency. And the most important question to be understood by the people is, how much will it cost? Now, as Dr. Ingals has said, there must be, from the best computations that can be made, ten thousand insane in the State of Illinois. There are provided for in the four State institutions, or will be when they are all completed, something like 4,700 insane. The present capacity of the institution I have charge of—the Kankakee Asylum—being about 1,700; that of Jacksonville, the central hospital, being 900, with accommodation being made for 300 more. The institution at the southern portion of the State, now accommodating 700, will accommodate 1,000, and the one at Elgin, having 500 at present, will have 800. The remainder of the insane persons are cared for mainly in the County houses of the State. One thousand of them are crowded into the Cook County Asylum, which has not respectable accommodation for over 300; and in the same proportion the other counties of the State, the most populous ones, all have large poor houses into which the insane are thrust. They are not constructed in a proper way to accommodate these unfortunates so as to give them the requisite care and attendance. I suppose it is unnecessary at this time to enlarge upon that. The examples we have had in the past of trouble occurring in the care of the insane, the

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abuses and outrages that have been brought to light in different parts of the State where the insane are thrust upon the tender mercies of the County, indicate a fact that is familiar enough to all. Now, why is it that State care is better than County care? It is important to understand that, especially for those who have not thought of this subject. The State institutions are under control of a Board of Trustees appointed by the Governor and confirmed by the Senate. The men who are appointed Trustees of the State institutions serve without compensation. They receive simply the amount of their actual expenses when they attend meetings or are engaged for the institution. It is not therefore a position that any one would seek that does not take a little interest in being useful in the community, in doing creditable and honorable work in caring for unfortunate persons without receiving any emolument. This system results in the institutions for the insane being managed by men who are intelligent and philanthropic, for the reason the trusteeship is a position that would not be sought for by any one who simply desired to hold office under a political party for personal ends.

The State Hospitals, moreover, are under the charge of experienced medical and other officers who have special fitness for the work.

The management of the insane in County institutions differs materially from the system in vogue in State institutions, for the reason that all County houses are necessarily under the control of the Board of Supervisors—men who are elected to their offices who have sought the office mainly from interested motives for political advancement and to gain credit for saving all the money they can and running the affairs of the County as economically as possible. They are apt to regard the insane paupers as differing from the ordinary paupers only in that they are more disagreeable, more difficult to care for, and do not provide for them the attendance and care they need. They are not wholly to be blamed for this, because caring for the insane *is* not their proper business. They do not generally receive any special medical attendance, and persons are not engaged to care for them at all. The insane in the county infirmaries are cared for mostly by their fellow paupers in County houses throughout the State. They are huddled together without much regard to condition or sex. There are no proper accommodations for them. They are often destructive, noisy and untidy in their habits,

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and there is no one around them who is interested enough, or intelligent enough to know how to redeem them from this miserable condition. That is the reason why we hear from different parts of the State from time to time of unfortunate insane women being caged up and left naked in the cold, given their food upon the floor, obliged to eat their meals in the same way that a dog eats his. Furthermore, they are provided with no accommodation for cleanliness, and, in fact, none of the things which are necessary for sick and helpless persons.

Now as to providing for the insane. There are 4,700 provided for, and there are certainly no less than 2,000 in the State at the present moment who need proper care as urgently as is the case with those who are already provided for in the State institutions. To build an institution for the insane, that is a new one, or to make additions to old institutions, to accommodate additional insane persons, requires a considerable outlay of money, and the expense of building such an institution for the insane has been regarded as necessarily ranging from $800 to $1,500, per patient. That has been the expense of older institutions of this and other States. Where economy has been practiced, they have cost on an average of $1,000 for every patient. I am not speaking of their support, but simply of buildings and the necessary furniture and apparatus in caring for the inmates, such as for supplying water, heat, light, fuel, laundry, etc. These figures have been reduced somewhat. Institutions have been built in later years at a cost considerably less. I think it is now possible under some circumstances to build a respectable institution for the insane at an expense of $500 per patient. Less than that would not, in my opinion, accomplish the work and give good and substantial results, and in some cases it would take more; but even at that low rate, if it were necessary to provide for 2,000 insane persons, as it undoubtedly is, it would cost considerable money, but I do not hesitate to say that two institutions should be built in this State, each of them with a capacity of 1,000 patients, and should be located in parts of the State which are now unprovided for—at least as near central as possible to the counties needing them, and it would be necessary to appropriate $1,000,000 to accomplish this object. The older style of institution, while handsome and imposing and rising many stories in height, is not

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regarded as the most practical, and is certainly not as economical as the more modern structure, built more like ordinary houses, two stories in height. The tendency at the present time among most of those who have studied the matter and are interested in it, is to advocate institutions for the insane as nearly as possible like the ordinary dwelling, the buildings necessary being divided into groups whereby the insane can be classified in such a way as to make things congenial to them and render their lives as natural and domestic as possible, and, in some measure, as though they were at home with their parents or friends.

There is another very important question in regard to providing for the insane, or rather in reference to one particular element of the insane, that is the source of more annoyance, more anxiety and danger than any other, although their number is comparatively small, and that is the class known as insane criminals—persons who have insanity and crime associated together They are either persons who were first criminals and have been sent to the penitentiary as convicts and have been found insane, or persons who have committed crimes as the result of insanity, and are, nevertheless, dangerous criminals, although owing to their insanity they are not responsible for their acts and ought not to be punished as sane persons. As the matter of provision for the criminal insane now stands, these persons are sent to the ordinary asylum. From our penitentiaries, murderers, burglars and thieves and every description of criminals that are found insane are committed to an ordinary asylum and are there necessarily mingled together with the innocent and reputable insane. There is not an institution in the State which has not a more or less considerable element of the criminal insane in it, and in which the more reputable and innocent persons are not mingled with these objectionable persons. The insane patients themselves feel it and often talk about this injustice, and it is a complaint that is often made to me by patients under my care that they are associating with persons who are known to have come from the prison, and who have been guilty of crimes which should place them where they would not be brought in contact with persons that are innocent. There are probably 250 insane criminals that should be separately provided for in the State of Illinois at the present time.

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This matter has been brought to the attention of the legislature and has been acted upon favorably on two different occasions. At the session of the legislature the past winter, an appropriation was made to provide for the insane criminals at the southern penitentiary; but the Board of Commissioners of the penitentiary, when they came to consider the subject of carrying out the intent of the law, decided that the appropriation was not sufficient, and nothing has been done about separating this class of insane, although it is the intention and desire of the people of the State and the legislature that they should be separately provided for.

Finally, in regard to full provision for the insane, I will say that in order to properly provide for the insane now unprovided for in Illinois, it will be necessary to increase the accommodations until a point is reached where there will be a balance struck between, on the one hand, the new cases that occur from year to year, and, on the other hand, the cases that either recover or die, and thus pass out of the institution, so that there will be sufficient room in the institutions, as recoveries or deaths take place, to make vacancies for all new cases that occur. In order to accomplish this object it would be necessary to provide, at the least calculation, for not less than 2,000 additional insane. The above are some of the leading points regarding provision for the insane which it seems desirable to mention. I do not feel sufficiently prepared to detain you longer at this time, and there are other important branches of this subject, concerning which, other gentlemen will address you.

THE OBLIGATIONS OF SOCIETY TO THE INSANE AND THE RIGHTS OF THE INSANE WHICH SOCIETY OUGHT TO RESPECT.

SANGER BROWN, M. D., CHICAGO.

A disease which deprives its victim of the power of directing and deciding as to his treatment and of co-operating with those who are entrusted with that responsibility, is one which of all others is entitled to our most careful and serious consideration.

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The title of the very able paper now under discussion, very properly, I think, implies that insanity places the individual suffering from it in a peculiar state of dependence upon the community in which he resides.

Having as favorable an opportunity as others of gaining an insight of the construction and tendencies of our social and political institutions, and a much more favorable opportunity of knowing the manifestations of insanity and the necessities of the insane, it would seem eminently proper that the voice of our honorable profession should be heard when the question of the rights of the insane and the obligations of society towards them as represented by the body politic are under consideration.

It may fairly be asked, What are the obligations of society in relation to the insane, and what are the rights of the insane which society is bound to conserve and respect? How may these obligations best be met, and these rights best protected and conserved?

It is very evident that an exhaustive discussion of these questions would involve an examination of the ultimate ramification of social and political development. Such an examination is manifestly out of place at this time.

It is only possible to make a few general statements bearing upon the subject, and draw some conclusion from them.

Everywhere throughout the State the obligation of society toward the insane is practically the same, and therefore the benefits and gratuities extended to this unfortunate class should be as nearly as possible uniform, and the burden of expense necessary to meet this obligation should be as evenly distributed as possible; manifestly these ends may better be reached by state than county or municipal management.

Experience has abundantly proven that the care and treatment provided by the State is vastly superior in every way to that furnished by counties or municipalities, and it is thus obvious either that the one is better than it need be, or that the other is not so good.

That the treatment provided by the State more nearly represents the just obligations of society towards the insane than that supplied by counties or municipalities, will, I think, be generally conceded, and many of the reasons for this are quite apparent.

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The composition of the State legislature is numerically and individually superior to that of a county or municipal body, and therefore much more competent to deal with a subject of such vast magnitude and far-reaching complications as this one.

By placing all institutions for the insane under State management, they are removed as far as possible from the baneful influence of the selfish and unprincipled designs of small politicians, who would make them subservient to their plans for personal plunder and patronage.

A wise system of State management by exempting the officers of these institutions from the demoralizing influence of practical politics will attract to the service the better class of our profession, with correspondingly beneficial and desirable results.

Though the distinguished author of the paper before us, has for the most part confined himself to the consideration of the financially dependent insane, he has readily conceded that the title of his paper renders pertinent any remark bearing upon the relations of society to that class of the insane who are not in a condition of financial dependence.

I think it can be safely asserted that our regard for the estimation in which we are held by others, is directly the most potent inhibitory force concerned in maintaining the integrity of of our social fabric, and indirectly I think this regard will be found closely interwoven with all the practical concerns of life.

"He who filches from me my good name, robs me of that which not enriches him, but makes me poor indeed."

Now, however unfair it may seem, we all know perfectly well that a man who is known to have been insane, never enjoys the same standing in a community that he did before.

Every individual has a right to conceal, so far as he can, his personal infirmities, and when, by reason of disease, he is incapacitated from exercising such right, it is the duty of those acting in his behalf to protect him in this particular to the utmost.

It is desirable, too, in insanity as in most other diseases, that the patient should have early access to efficient treatment, for it is in its earlier stages that insanity is most amenable to treatment.

As a preliminary incident in the treatment of insanity, it is generally necessary that legal authority be conferred upon the physician in charge, to impose some degree of restraint.

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Whether insanity exists or not in a given case, and whether or not restraint is essential to its proper treatment, are purely medical questions, and should be decided by properly qualified members of the medical profession. And finally, the legal aspect of the case should be examined and the legal authority conferred by those members of society most competent to make such examination and confer such authority—obviously the judges of our established courts.

It is desirable, too, that there should be established and maintained within the borders of the State, institutions equipped specially to furnish such refinements of treatment as modern medicine can supply and as affluence demands and is willing and able to pay for.

It seems almost incredible that a law diametrically and actively opposed to the rights and interests of society in general, and the insane in particular, as above set forth, should now be in force in this State, and yet such is the sad and melancholy fact.

I refer, of course, to the law by which the insane are admitted to hospitals for treatment, the provisions of which many of you, no doubt, have a painful familiarity with.

This law by compelling the patient to appear in open court much in the attitude of a criminal, makes the most damaging exposure of his personal infirmities that could possibly be contrived, besides being calculated to directly aggravate the symptoms of his disease.

A course, the contemplation of which naturally excites such feelings of revulsion in the minds of the friends of the patient, and often in his own mind, too, causes steps toward the inauguration of efficient treatment to be delayed until the last possible moment, thus adding to the patient's sufferings and diminishing his chances of ultimate recovery.

The final decision as to whether insanity exists, and whether restraint is essential to its proper treatment in a given case, is placed in the hands of the jury, the members of which do not even pretend to any special qualifications in the direction of either medicine or law.

The personal exposure which this law involves has the effect of sending those patients who are able to pay for the higher grades

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of treatment to institutions lying without the borders of the State, into those States where the laws pay more proper respect for individual rights, a fact of which I observed frequent demonstrations during several years' service on the medical staff of the Bloomingdale Asylum in New York.

This, of course, prevents the establishment of such private institutions within the borders of the State as those already alluded to, and as a secondary result discourages our profession from paying as much attention to the subject of insanity as it deserves.

That such a law should ever have been enacted, and that it has continued in force for a number of years, affords a sad and melancholy instance of the gross injustice that may be visited upon the helpless and innocent by misguided and misinformed popular feeling.

Prompted by the ingenious devices of novel writers, and credulous of the cunning and misleading statements of a certain class of the insane, the people of this State, believing themselves in eminent danger of incarceration in hospitals for the insane, clamored for and obtained the enactment of this law. The real facts in the case and the rights of the insane were not calmly considered. Popular feeling, strong, active and ignorant, carried the day.

That many of those who took an interested and active part in securing the passage of this law, believed they were acting in the line of their duty, I have no doubt; neither can it be doubted that in the main those upon whom the duty of its administration devolves show all the consideration for the feelings of those who are compelled to submit to it that its provisions will allow; but it is a bad law, a very bad law, and I have heard very many people, both in this country and abroad, who were especially qualified to express an opinion on the subject, pronounce it the worst law of its kind in the whole civilized world.

That it is entirely unnecessary is evident from the fact that in many States laws have been thoroughly tried which, both theoretically and in fact, furnish as full and ample protection to the citizens as this one, while they pay all due respect to the rights of the insane.

I venture to hope that this organization may at no distant date take measures to secure such legislation as shall effect a more satisfactory adjustment of the relations between society and the insane than those which now exist.

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GUIDING PRINCIPLES FOR THE MANAGEMENT OF THE INSANE.

DANIEL R. BROWER, M. D., CHICAGO.

Dr. E. Ingals has so admirably stated my opinions in this important matter that I can add but little. A due consideration of the question brings to my mind, however, first, the proposition, viz: that *insanity is increasing rapidly*, out of all proportion to the growth of the population. In 1860, the proportion was one to about every five hundred and twenty of the population; in 1870, one to every four hundred and ten; in 1880, one to every three hundred and sixty, and the ratio in 1890 will be at least one to every three hundred.

I trust this Society will, at an early day, give a session to the discussion of the causes and prevention of this frightful increase, and formulate rules for the government of the laity in the matter of prophylaxis.

The second proposition is the fact that insanity is a curable disease, in its early stages. None of the formidable diseases have a more favorable prognosis, if the proper treatment is applied early —every day's delay, however, diminishes rapidly the chances of recovery, so that after six months the case may generally be called incurable.

The third proposition is that but a few cases can be successfully treated at home. The quiet, the systematic medication, the diversion, and the judicious exercise, all essential to successful treatment, are rarely available at a private house. And when the case becomes incurable by reason of delay, it not only becomes a life-long source of expense to the household, but will, by its presence, *tend* to the development of other cases in the same family or in susceptible friends. Of the latter most serious and important fact, there is no doubt.

The fourth proposition is that the hospital should not be a county institution. The insane are the wards of the commonwealth and should never be subjected to the vicissitudes of county politics. It should be on a firm basis. The medical superintendent and his

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assistants should in no way be influenced by local political changes.

The last proposition is that insane criminals should be treated in a separate hospital. There is the same reason for shielding the sick from the malignant influence of criminals that there is for shielding the well. The State Legislature should at once provide at least two additional State institutions for the ordinary insane, to be located at convenient places, and one for insane criminals in connection with the penitentiary at Joliet. And when the State Legislature considers legislation necessary for the welfare of the insane, they should also modify the present objectionable laws for the commitment of the insane to the hospitals.

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REPORT ON LARYNGOLOGY.

W. E. CASSELBERRY, M. D., CHICAGO.*

Adenoid Hypertrophy in the Naso-Pharynx.

In multiplicity of cases, gravity of consequences, facility of operative treatment, and brilliancy of results, the disease which is variously known as adenoid hypertrophy in the naso-pharynx, "adenoid vegetations," and "hypertrophic naso-pharyngitis," may be said to outrank any other affection of the upper respiratory tract. In the normal state, isolated and aggregated, muco-lymphoid follicles of the same adenoid structure as those in the pharynx are embedded throughout in the mucous and submucous tissues of the naso-pharynx. Histologically, each in its simplest form consists of a depression of the mucous membrane lined with its epithelium and enveloped in a stratum of reticular connective tissue, entangled in which are innumerable lymphoid cells, lymphoid bodies (closed follicles), and lymphatic and other vessels. Morphologically they are closely related to the faucial tonsils which are compound aggregations of the same. At the vault of the pharynx a number of these follicles are grouped together, forming a compound gland, analogous to the tonsils and known as the third tonsil, the pharyngeal tonsil, or the tonsil of Luschka. In the normal state this is not of sufficient size to deserve such appellation; but when hypertrophied, as it frequently is, it bears some resemblance to the faucial ton-

*Professor of Materia Medica and Therapeutics, and of Laryngology and Rhinology in the Chicago Medical College.

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sil in a state of enlargement. Several sorts of aggregation are distinguishable clinically by rhinoscopic inspection. Of these the more common are: (1) The *fimbriated variety*, in which the growth is composed of several cock's comb-like masses closely packed together; (2) the *stalactitic form*, in which multiple pear-shaped bodies are pendant, like stalactites, from the vault of the pharynx, and to which the name "adenoid vegetations" is most truly applicable; (3) the *individuate variety*, in which the mass is made up in large part of but a single neoplasm, of firmer consistence, smooth surface, and more or less irregular contour, according to size and degree of impaction.

Regarding consistency, this is found to vary in accordance with the amount of fibrous tissue in its composition. In the fimbriated and stalactitic forms the adenoid element predominates, rendering them friable and soft to the touch, while the individuate variety often contains much fibrous tissue, which gives it greater density and tenacity. Between these forms are encountered all degrees of variation, both in contour and texture.

Etiology. The disease is frequent among children, not uncommon with adolescents, and not at all rare during early adult life. Children of syphilitic and tuberculous parents, and those otherwise the victims of scrofulosis, are predisposed to it. It is unnecessary to discuss the relationship between these diatheses. Whether as a result of inheritance of one or more of them, or of acquisition through bad hygienic influences, we recognize in the state called *scrofulosis* a debilitated constitutional condition, one of the characteristics of which is a pronounced tendency toward hyperplasia of the lymphatic and lymphoid structures. The reason therefor one cannot state any more than one can formulate a full explanation of normal cell proliferation. It concerns that of which we know nought—the ultimate essence of life itself. Climatic inequalities furnish adequate exciting

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causes. Repeated acute congestion from "cold," acting upon a structure already the subject of diathetic predisposition to hyperplasia, serves to establish a chronic hypertrophy of the group of muco-lymphoid glands in the naso-pharynx. This mass is then constantly swathed in a viscid muco-purulent, readily decomposable secretion, the product of its own elaboration, which, by exciting and maintaining irritation, further conduces to the development of the growth.

Symptoms. The space of the naso-pharynx is, by nature's law, designed to be free, and to serve as a common area of air communication between the five openings which enter it.

The Eustachian tubes open into it, one on each lateral wall posterior to the nasal choanæ, and upon perfect patency of these openings, together with free nasal respiration, the power of hearing is dependent, for ventilation with normal air pressure in the cavity of the middle ear, is essential to correct auditory sense. The adenoid excresences, when large, are forcibly compressed between the lateral walls of the naso-pharynx, or they overlap the tubes of the Eustachian orifice from above, acting in either case as a stopper to one or both openings; or else the vegetations which are crowded in above and behind the Eustachian tubes deform and close the orifice by forcing its upper projecting lip downward to meet the lower border of the rim.

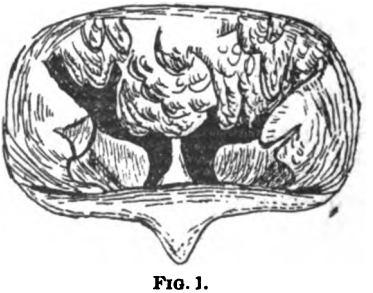

FIG. 1.

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FIG. 2.

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Again, even with lesser hypertrophy, the accompanying catarrhal state is prone to extend by continuity of surface along the Eustachian tube and to excite exudation or suppurative inflammation of the middle ear. Deafness, therefore, is frequently a deplorable symptom, and one which is liable to become permanent unless speedy relief be afforded. Indeed, it is estimated that 100,000 persons owe their hearing power to-day to the operation for adenoid growths. The countless thousands who are deaf for want of the proper operation at the proper time we will not dwell upon. Into this space open also the posterior nares, the natural respiratory passage being *via* the nose and naso-pharynx. Adenoid hypertrophy, therefore, serves as a plug to the posterior nasal openings and obstructs nasal respiration completely or in part according to the degree of glandular enlargement. From this point we find it a matter of exceeding interest to trace the origin and development of each successive step in the series of deformities consequent upon this condition. The plugging up of the posterior nares necessitates oral breathing, and the constantly open mouth interferes with the normal adaptation of certain facial muscles which in turn effects radical changes in the contour of the soft and developing bones of the face, the whole resulting in a physiognomy characterized by a vacant, stupid, almost idiotic expression of countenance, which can be better illustrated by photographs from nature, than described.

The hanging lower jaw causes the face to appear elongated. The nose is pinched or its alæ distended, while the angles of the mouth and eyes have a drawn appearance.

Morever, as pointed out by Henri Chatellier,[1] of Paris, cited by Hooper,[2] of Boston, the air cavities in communication with the nose, as the frontal, maxillary, sphenoidal, and eth-

(1) Des Tumeurs Adenoides du Pharynx, Paris, 1886.
(2) The Mechanical Effects of Adenoid Vegetation in Children. Reprint from Medical and Surgical Report of the City Hospital at Boston, fourth series, 1889.

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moidal sinuses, which are essential to the proper expansion of their respective bones, and cease to develop when the circulation of air through the nose is interfered with, thus altering nature's intent regarding the dimensions of the face and head, and still further deforming the physiognomy. Dr. Hooper has also described and illustrated the next link in the chain of deformities—the high-arched, hard palate and V-shaped indenture. The naturally rounded arch of the roof of the mouth is formed, in large part, by the palate process of the superior maxillary bone, which also constitutes a corresponding portion of the floor of the nose. Augmentation of atmospheric pressure upon the buccal surface of the palate process, and the impact of air currents to and fro during mouth-breathing, together with the dimunition of intra-nasal air pressure incident to nasal obstruction, gradually force upward the center of the hard palate and change thus the obtusely rounded Romanesque arch into one of Gothic shape —the pointed or high-arched palate invariably existing in association with long continued and excessive adenoid development during childhood. Elevation of the palatal arch

FIG. 3.

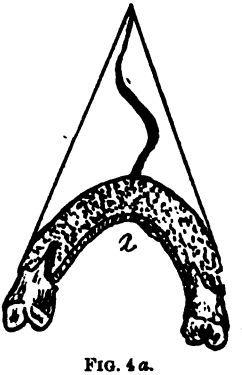

FIG. 4a.

lessens the traverse diameter of the jaw, and causes it to grow pointed in front—the so-called V-shaped indenture—and with the resulting contraction of the alveolar process, the teeth,

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especially those near the point, are crowded into various grotesque aggregations, or are rotated on their axes—a condition depicted in Figure 3, drawn from a typical case, in which the two central incisors overlap, and the two lateral incisors undergo a quarter rotation, and stand at right angles to the alveolar process.

Dentists have long recognized what they call the "habit" of mouth-breathing as a prolific source of irregular indentures, and S. C. G. Watkins, in a recent number of the *Ohio Journal of Dental Science*, says: "I know a child, which at birth, and up to its third year, had a perfectly formed and normal arch; but it acquired the habit of breathing through the mouth, and the arch is becoming narrow—so much so that you can not do more than place your finger in the center of the arch. Now, at the age of nine years, there has been a radical change in the shape of the mouth, and from no other reason than oral breathing."[1]

We would advance a step and assert that mouth-breathing is but rarely a mere "habit." It conduces to so much discomfort that even the babe would feel inclined to close this aperture, could he secure the requisite amount of air through the nose and naso-pharynx. Aside from greatly debilitated states, it is occlusion, to some degree, of these passages which necessitates the habit. Next, elevation of the palate arch must produce contortion within the nose. Deflections of the septum are rarely congenital; indeed, the only part of the septum which is ossified at this period is the vomer, the whole ethmoid bone, including the vertical plate, being in a soft, cartilaginous state. Traumatism, as shown by Robertson in the investigation of 217 cases, cited by Delavan,[2] can not fairly be made to account for much over half the number. Now, the

(1) It is proper to state that this relation of mouth-breathing to deformed indentures is questioned by some dental authorities, who attribute the elevation of the palatal arch solely to a perverted production of the permanent teeth. The association between the adenoid hypertrophy, as a cause of mouth-breathing, and the high-arched palate, is, however, so constant that an etiological relationship must exist.

(2) Reference Handbook of Medical Sciences, Vol. V., p. 213.

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septum, composed of the vomer, the perpendicular plate of the ethmoid bone and its cartilaginous portion is unequal in power of resisting compression to the bones by which it is incased. Designed by nature to fill vertically the natural space between the roof of the nose and its floor, the abbreviation of this space by elevation of the palatal arch through the instrumentality of naso-pharyngeal adenoid hypertrophy can not result otherwise than forcing the septum to provide for itself by bending and curving laterally in various directions—a condition which is diagrammatically represented in Figure 4, and which explains the œtiology of the remaining moiety of cases of deviation of the septum narium. Furthermore, guided by the contorted septum, even the external nose may be twisted to one side—a deformity common enough in its milder aspects, and not unfrequently seen in aggravated forms. Within the nares, also, the septal deflection acts as an additional impediment to nasal respiration and drainage, and becomes a potent factor in the evolution of hypertrophic rhinitis, or that form of nasal catarrh characterized by enlargement of the turbinate bodies.

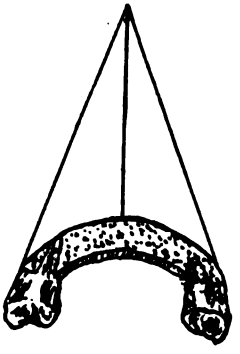

FIG. 4.

Headache is also complained of, although a sense of mental obtundity and heaviness is more usual than absolute pain in the head.

Finally, not only, as before said, do these unfortunates *look* stupid, but they really *are* stupid, and exhibit abundant evidence of mental hebetude, with inability to fix the attention, to learn, to memorize, or to reason, the whole evidencing an impairment of

FIG. 5.

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cerebral function, which Dr. Guye,[1] of Amsterdam, has recently described under the name of *aprosexia nasales*. Indeed, we hold it not illogical to believe that in extreme cases of long duration, associated, perhaps, with deafness, such alteration of cerebal function might ensue as to result in absolute idiocy.

We might proceed to describe the "pigeon breast" and other varieties of chest deformity and altered pulmonary development which are traceable to this disease, and we might enumerate curious and intricate reflex manifestations excited by the same condition; but we have said enough—sufficient to reiterate, that herein lurks one of the most formidable of childhood's enemies, and to demonstrate, that if one would save to the adult his face, his figure, yea even his reason, one must enable him in childhood to shut his mouth.

Treatment. For pronounced hypertrophy the only satisfactory method of treatment is removal by surgical means.

Pean,[2] in 1837, advocated cauterization by nitrate of silver, and Voltolini,[3] in 1865, employed the galvano-cautery, and in 1871, the galvano-cautery écraseur. About this time W. Meyer described his small ring knives, fashioned on the tonsillotome principle, for operation through the nose, and also spoke of the method of destruction by scratching with the finger-nail. Stœrk, in 1875, depicted for the purpose a steel wire guillotine, and Zaufel, in 1876, advocated the use of the ordinary cold wire snare. Löwenberg first described his popular cutting forceps in 1879, some one of the many modifications of which is probably the best single instrument in use to-day. Cohen simultaneously devised similar forceps. The method by sharp curettes, recommended by Justi, in 1876, has since been elaborated by Trautman, whilst Gottstein has devised a curved knife well adapted to the individ-

1. On Aprosexia, by Dr. Guye, Professor of Otology in the University of Amsterdam. Journal of Laryngology and Rhinology, December, 1889.
2. Dr. F. Trautman. Hyperplasia der Rachentonsille, Berlin, 1886. 3. Loc. cit.

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uate variety. With adults and adolescents, it does not greatly matter which of these methods is employed, so that the object is thoroughly accomplished. With children, however, who will not hold still, most of them are inapplicable, and others simply barbarous, so that it is my desire to urgently advocate for children, the operation under complete ether anæsthesia, and to describe the technique thereof.

By way of contrast, we would first recall the sharp curette method of Trautman, now much in vogue at Berlin, in which the not unconscious, but terrified, howling child is firmly held by two assistants, the mouth gagged, and the sharp spoon pressed backward, forward and sideways, scraping and cutting, while the blood is spurted in all directions. To say naught of the immediate shock to sensitive nervous systems, such a procedure is always remembered with abject horror by the little one, so that the mere mention of the surgeon's name serves as a terror to him forever after.

By the method which we advocate the child is completly anæsthetized and then placed in the *sitting position* on the lap of an assistant, with its head against his left shoulder. The mouth is kept open by a gag, similar to those furnished

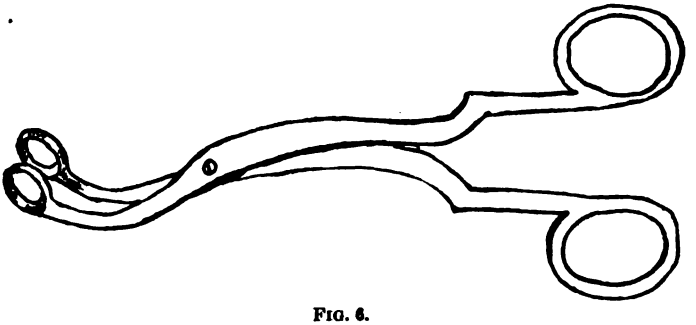

FIG. 6.

with intubation sets. To tie the velum forward, a small English catheter, with eyelets enlarged and cut opposite to each other near the point, is pushed through one side of the nose, its end caught in the pharynx by forceps and drawn

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out of the mouth, then threaded with a one-eighth inch silk elastic tape which is drawn back through the nostril by the catheter. The other end of the tape is in like manner drawn through the other nostril, the two ends and the loop of the tape being tied in a bow-knot over the lip. Three or four pairs of forceps, either the author's (Fig. 6), or other modification of Löwenberg's instrument, being in readiness, the left index finger is passed behind the velum, followed by forceps held in the other hand, a portion of growth is located, grasped and removed, when, without withdrawing the guiding finger, quickly, a second, third and even fourth pair of forceps are used, and thus several pieces extracted before active hemorrhage ensues. Instantly then, the patient is tilted well forward with the head pendant to permit the blood, while flowing actively, to escape by the nose and mouth. In a few seconds the gush is over, the patient can be raised, the remaining blood cotton-swabbed from the pharynx and the procedure repeated, and still again repeated, until the naso-pharynx is completely cleared. As a final stage, remaining shreds are thoroughly scraped by the finger-nail.

FIG. 7.

Little fear need be entertained of blood running down the trachea. That which trickles slowly will course along the œsophagus into the stomach, and at times of rapid flow this danger will be obviated by my method of tilting the child well forward to permit of escape through the nose. Otherwise the blood is liable to gush into the trachea rather than to be swallowed, assertions to the con-

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trary notwithstanding, for the function of deglutition during profound anæsthesia is suspended. Rapid and persistent cotton-swabbing may suffice, but is not so completely effective and it prevents the re-application of the anæsthetic during the bleeding interval, so prolonging the operation. The patient should be kept in bed until the following day, and, during healing, the parts should be cleansed by spraying through the anterior nares with an antiseptic alkaline solution. Fig. 7 represents the adenoid masses removed from a typical case at a single operation.

Space is inadequate for enumeration of individual cases. Dr. Franklin H. Hooper, of Boston, has reported upward of a hundred cases treated satisfactorily in a manner which differs only in technical details from the method herein described, and in our own hands the most satisfactory results have been obtained with each of twenty children so treated during the last three years, and in none were there any accidents or unpleasant consequences. There is no shock, and subsequent soreness in the throat is little complained of.

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DISCUSSION.

Dr. H. Gradle, Chicago:

Dr. Casselberry has so thoroughly and ably handled the subject, that there seems only one reason for my taking the floor, and that is to direct your attention to the great importance of the disease, its frequency, and unfortunately the frequency with which it is overlooked by general practitioners. In the main, I can only confirm in all details what the doctor has said in his paper. There are a few minor points which I would perhaps dissent from, and one is with reference to etiology. He spoke of scrofulosis. Scrofulosis is a vague term, but we cannot get rid of it altogether. Koch has shown that most of its characteristic lesions are tubercular. Undoubtedly there exists a predisposition towards tuberculosis, which predisposition we can term scrofulosis. I do not think we can establish the fact, from our present information, that certain cases of scrofulosis do not lead to enlargement of the pharyngeal tonsil, but certain types which we call scrofulosis are but the results of pre-existing disease of the pharyngeal adenoid tissue; I refer to the tendency towards eczematous and other eruptions of the skin of the face, especially around the anterior nares, a tendency to conjunctivitis, etc., which symptoms disappear completely after treatment of the nasal difficulty or the surgical removal of an enlarged pharyngeal tonsil.

As to the cause of the enlargement, I am not in a position to say more than Dr. Casselberry. We cannot trace it as a rule. Children are brought to us with a history of nasal obstruction, dating back months and even years. Wherever I have been able to trace the occurrence of enlargement of the pharyngeal tonsil from its incipiency, I have satisfied myself that the main influence is brought about by acute catarrh of the nose. I have seen quite a number of cases in which obstructed nasal breathing was pre-

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ceded by coryza. We can, in a good many instances, consider enlargement of the pharyngeal tonsil as a secondary result of acute suppurative rhinitis, which teaches us the necessity of paying a little more attention to the acute trouble than is generally done.

I might mention another thing which the doctor did not refer to, perhaps for want of space or time, and that is the frequency with which bronchitis of a chronic character is associated with adenoid vegetations in the pharynx. We can put it down as a rule that, where in younger children bronchitis persists in a chronic form, we must look for disturbances in the nose as the cause of it. This disturbance will be found in enlargement of the pharyngeal tonsil. We sometimes meet with it in older children, and not rarely in adults—a condition which is not fully referred to in any textbook to my knowledge. The symptoms are sometimes reflex. In a number of cases we find some enlargement of the pharyngeal tonsil, not enough to plug the post-nasal space, but sufficient to produce irritation or some blockage whenever acute congestion accompanies it.

As to the method of operating, I am doubtful of using anæsthesia to the extent that the doctor does. He says it is cruel to operate on a child without an anæsthetic. The operation may be done without an anæsthetic, if the child is not too resistant. The instrument I have used during the last two years is a modification of the forceps which I have constructed myself. The blade is wide enough to cover the entire pharyngeal space, the cutting portion being triangular, which passes upwards. With my instrument the operation can be accomplished rapidly. The hemorrhage is considerable for a few moments, but not alarming. In curetting with the sharp spoon of Trautmann I find the hemorrhage is greater than with the crushing forceps, if the forceps is not too sharp.

The after treatment I have not found beneficial to a great extent. If there is such suppuration it is well enough to treat it at the time. If the suppuration is not excessive before the operation, I find the wound heals just as well if the child is not disturbed for four or five days. Antisepsis is practically impossible, because we cannot operate in an aseptic field.

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DR. W. E. CASSELBERRY:

To be as brief as possible I will pass over minor points and speak at once on the question of general anæsthesia for the purpose of operating. I am well aware that the administration of an anæsthetic for this operation is not usual in this section of the country. It was for that very reason that I prepared this paper and described the technique of the operation under ether. I am also aware that the method is common in the East, and by members of the American Laryngological Association is considered entirely justifiable. It is of supreme importance that the operation be done while the child is yet young, and with young children there is something peculiarly horrifying about the operation without an anæsthetic. It cannot justly be compared to the drawing of a single tooth, but rather to the drawing of fifteen or twenty teeth. The operation is painful, even with the local use of cocaine, which children always object to, and which perhaps itself is not devoid of danger.

There is considerable hemorrhage, and an impression of horror is made upon the nervous system of the child which it does not forget for years, and which, therefore, is an element to be taken into consideration. The shock is also considerable.

The operation cannot be done in a single sitting without an anæsthetic, and the appearance of barbarity to the parents of the child will frequently prevent a repetition of a treatment without an anæsthetic, and so prevent the surgeon from carrying out his ultimate design.

I have several times commenced the treatment of cases without anæsthesia only to be compelled to make the operation under ether in order to finish satisfactorily. Certainly, by means of persuasion, cajolery and force, the child can be made to submit and the treatment accomplished without ether. In dispensary practice, for various reasons, I operate more frequently without than with it, acquiring thus a perfect familiarity with both methods, while in private practice, unless the child is older and exceptionally docile, I always advise an anæsthetic.

Moreover, deliberation is then permissible, a half hour or more may be used, if necessary, and all fragments carefully sought for and cut or scraped away, thus not only finishing the operation

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at a single sitting but doing it more completely than can otherwise be done at many sittings or at all.

Concerning the criticism of the term "scrofulosis," the speaker has but voiced my own conviction, and the same is implied by the phraseology of that part of the paper in which "scrofulosis" is mentioned.

DR. G. W. WEBSTER, CHICAGO:

I wish to congratulate Dr. Casselberry for this presentation of an important subject. I wish it were in my power to say a word that would impress upon the general practitioner the importance of this subject of adenoid hypertrophy. I know of no question in this line of practice of so much importance that is so universally overlooked.

In regard to the consequences of this condition of adenoid hypertrophy, there are several points to which I would like to refer. One is in regard to deformities. I have seen in the last year two cases of this disease in which the deformity of the lower jaw was so marked that it was impossible for the child to approximate the incisor teeth within one-quarter of an inch. The child was six years of age, and the mother had noticed the condition for over three years.

Another condition I have noticed frequently in young women is that, where menstruation has not been established, there is a condition of so-called anaemia, pale cheeks, and other symptoms which are associated with, and I believe caused by, this condition of adenoid hypertrophy. Under these circumstances, I have found that, without any treatment except the complete removal of the hypertrophy, menstruation would be established within four or five weeks after other methods in the way of internal medication, dietetics and the like had been faithfully tried.

In regard to the treatment, I cannot say that I do not entirely agree with the doctor, but I do not follow the method of treatment recommended by him. I have usually performed this operation without an anæsthetic. My method of operating, as a rule, especially with small children, is to use a modified director, one that, under ordinary circumstances, can not do any injury to the parts if reasonable care is used in its manipulation. It is impossible in the normal throat to cut or remove any tissue with this instrument.

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It is only when we have hypertrophied tissue that it is possible for anything to be cut off. I find in four cases out of five that, if you have these curettes made to correspond in size to the age of the individual, you nearly always remove the entire mass with a single stroke of the instrument. The hemorrhage is sometimes quite profuse for a few seconds, but never alarming and dangerous.

In regard to pain, I have never had the operation performed on myself, therefore I can only judge of it by what others tell me, and they say the pain is not to be compared with the removal of the pharyngeal tonsils, or with the extraction of a tooth. As a rule, I would not think it best to give an anæsthetic, but in some instances it is necessary

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STRICTURE OF THE ŒSOPHAGUS.

E. FLETCHER INGALS, A. M., M. D., CHICAGO.*

Stricture of the œsophagus consists of a narrowing of the tube, resulting usually from simple inflammatory thickening or malignant disease, and characterized by difficulty in deglutition, especially of solids. It is more frequently met with in men than in women, and usually occurs in early life. It is not infrequent among children, and a few congenital cases have been observed. Those strictures resulting from swallowing hot or acrid fluids, are usually found at the upper part of the tube just back of the cricroid cartilage. Next in frequency is the lower portion of the tube, near the cardiac orifice of the stomach. The stricture may be single or multiple. Usually not more than one or two inches of the tube is involved, and the obstruction may be slight, or so great as to almost occlude it. When a stricture has existed for a considerable time, the œsophagus above it is apt to be dilated, as the result of detention of food and fatty degeneration of the muscular walls. If the stricture is very close, the œsophageal walls below it are usually found to be atrophied.

Though the disease is occasionally spontaneous, or results from simple inflammation, or possibly from causes that can not be ascertained, it is usually of traumatic origin, in early life, but generally of a malignant nature when found in those past fifty years of age. Most frequently the stricture

*Professor of Diseases of the Throat and Chest, Women's Medical College. Prof. Laryngology Rush Medical College.

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results from swallowing hot or acrid fluid accidentally, or with suicidal intent, but there are a considerable number of cases in which neither accident nor symptoms of acute or chronic inflammation can be remembered by the patient. These are said to be of spontaneous origin. It is probable, however, that in most or all of these a history of inflammation would be present if the patient's memory were unfailing. Rarely cases may be of syphilitic or tuberculous origin, and exceptionally the disease may be rheumatic.

The first symptom of the disease is difficulty in deglutition, which may come on suddenly and last only during a single meal, or may continue for two or three days. Usually this symptom then disappears for a time, but returns after a few days or weeks. The intervals become shorter and shorter, the attacks longer, until finally the obstruction is constant. The dysphagia is first experienced on attempting to swallow hard or solid boluses, but as the disease progresses, it becomes more and more marked until the patient has to live entirely on liquids, and finally, in extreme cases, even these can not be swallowed. Frequently spasm is excited on attempts at deglutition, and the food may be at once regurgitated. As the contraction becomes narrower and the œsophagus above it dilates, food may pass part way to the stomach and remain there for several hours before it is expelled. In such cases the extent of dilatation may be estimated by the amount of food regurgitated. When the disease is of malignant origin, the food expelled is found to be more or less coated with blood or pus.

In the malignant cases, dysphonia, and more or less dyspnoea, are usually present, at some time during the course of the disease, as a result of pressure on the recurrent laryngeal nerve, and consequent paralysis of the vocal cord. If paralysis of the abductor muscles becomes suffi-

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cient, dangerous or even fatal, dyspnoea will ensue, unless tracheotomy is performed.

In some instances spasm of the œsophagus is a frequent symptom, the patient being at times unable to swallow anything, whereas, at other times, he can swallow without much difficulty. Pain is often experienced on deglutition of solid matter, especially where the disease is of a malignant character. A sense of pressure on the lungs is sometimes complained of. Emaciation occurs, and owing to insufficient supply of nourishment the patient becomes weak and nervous, and is easily exhausted.

Diagnosis.—A thorough examination with the laryngoscope may enable the physician to exclude diseases of the pharynx or to discover paralysis of the vocal cords. By auscultation during deglutition of fluids, a gurgling sound may frequently be detected over the stricture, due to the passage of bubbles of air.

Stricture of the œsophagus may be distinguished from tuberculous laryngitis by the constitutional symptoms, by the pulmonary symptoms and signs, and by inspection of the larynx. The pain during deglutition is much greater in tuberculous laryngitis than in stricture of the œsophagus, excepting, perhaps, when the latter is of a cancerous nature.

Tumors of the larynx or pharynx, and some of those of the œsophagus, may be readly detected by laryngoscopic examination. Other tumors of the œsophagus may usually be detected by the passage of the œsophageal bougies.

Spasmodic stricture of the œsophagus frequently causes quite as much difficulty in swallowing, at least for a time, as organic disease. The symptoms are not very different from those of the latter, but in the former a large sized œsophageal bougie may be readily passed into the stomach. The difficulty in deglutition in the spasmodic affection comes on suddenly, lasts for a short time, and then entirely disappears, to recur again, possibly, after weeks or

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months; whereas the symptoms of organic disease steadily increase in severity without cessation, though they are subject to exacerbations.

The existence of a stricture may often be suspected or determined by consideration of the history; and this impression may possibly be verified by inspection or palpation with the finger, or by auscultation over the œsophagus, while the patient swallows fluid. But the most exact method of diagnosis consists of passing bougies or probes into the œsophagus. This should be done in all cases before making a diagnosis, excepting when there is reason to fear ulceration or great weakening of the œsophageal walls, as in some cases of malignant disease. In making this exploration, the instrument should if possible, be carried carefully through the contracted portion and into the stomach, in order to determine whether more than one stricture exists. By the size of the instrument which can be passed we ascertain the calibre of the stricture, and by the amount of resistance we can form some estimate of the nature of the tissue causing the obstruction. Great care should be used in this examination, especially when there is fear of malignant disease, or when there may possibly be ulceration of the œsophagus, otherwise the tube may be torn, and a dangerous accident result. The instruments recommended for the purpose are ordinary soft catheters or bougies, graduated œsophageal dilators of the same material as the flexible English catheter, olivary bougies attached to a whalebone stem, and instruments consisting of a combination of soft with hard rubber. I generally employ in children the ordinary soft bougie with a tapering bulbous point, and for adults a long whalebone stem to which is attached an ivory olivary body. These olives should be conical at both extremities, otherwise it has happened that an instrument that has been passed through the stricture could not be

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removed without great difficulty. The surgeon should be careful that the olive is firmly fastened to the stem.

Prognosis.—Non-malignant strictures sometimes progress very slowly, and the patient may live for years before succumbing to the marasmus which will finally result from a deficient supply of food. Malignant strictures are fatal usually in from eight to eighteen months. Cases resulting from burns, scalds, or the ingestion of acids are generally incurable and necessitate an unfavorable prognosis, because of the tendency of dilatation of the œsophagus above the stricture, and finally ulceration, abscess or gangrene. The prognosis is comparatively favorable in most cases where the stricture is not very narrow and has resulted from catarrhal inflammation or indeterminate causes. If, however, the condition has been neglected for a long time so that the hypertrophied muscles have undergone fatty degeneration, and the tube has become dilated, the prognosis will be much less favorable, though occasionally patients live for many years, even with quite large pouches from the walls of the œsophagus. In fatal cases death may result from an abscess caused by pressure of food above the stricture, or from pulmonary or other diseases, or from gangrene resulting from the reduced condition of the system.

In spasmodic stricture the prognosis is favorable if proper treatment is adopted, but, as will be illustrated by cases to be reported, the patient may be reduced to an alarming condition if this is neglected, and I have no doubt that some die for want of surgical interference.

Treatment.—In the treatment of this disease, nourishment that can be easily swallowed must be provided for the patient, and during exacerbations, or when the stricture is very close, nutritive enemata must be employed. Whenever obstruction to deglutition exists the œsophagus should be carefully examined, and if found to contain a foreign

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body it must be removed, or, if this is impossible, it should be forced into the stomach. Abscesses pressing on the tube should be evacuated if possible; or, if a tumor is found, its removal should be attempted by forceps, snare or œsophagotomy.

The iodides are valuable when the disease results from rheumatic or specific inflammation, but in other cases they do little, if any, good. In malignant cases, arsenic is recommended for its specific effects, and opium must be given in sufficient quantities to relieve pain. In all other cases, and occasionally, in the malignant, the most important treatment consists of mechanical dilatation of the stricture. This may be done by interrupted dilatation with bougies of varying size; by internal œsophagotomy and subsequent dilatation, or by electrolysis. External œsophagotomy and subsequent dilatation has also been practiced with success in some cases. Internal œsophagotomy is usually considered a hazardous operation, because of the danger of hemorrhage or perforation of the œsophagus. However, this has been successful in a few cases.

Dr. J. O. Roe, of Rochester, has reported three cases successfully treated in this way. Nevertheless, the method is not in favor with surgeons. External œsophagotomy is indicated in extremely rare cases only, in which the stricture occupies the portion of the œsophagus which can be easily reached, and usually only in those cases in which a foreign body must be removed by an external incision. In malignant cases, external œsophagotomy or gastrotomy have been recommended when there is some special reason for prolonging life a few days, but the average duration of life is only one month, in cases which recover after such operation for cancer.

Electrolysis has also been considered a dangerous procedure, on account of the close proximity of the pneumogastric nerve. However, recent reports of a number of suc-

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cessful cases will stimulate further experimentation in this direction.

The safest method of treatment, and one that has the sanction of the age, is by gradual, interrupted dilatation. For this purpose I use soft bougies, with tapering and bulbous tips, varying in diameter from seven to ten mm., or ivory olivary bodies, conical at both extremities, which are screwed firmly to a whalebone handle. I have of these a series of eleven, varying in diameter from 8 to 22 mm. Dr. Roe, of Rochester, has invented an œsophageal dilator with a conical tip of soft rubber, which is continuous with a hard rubber base, this being attached to a whalebone stem. This would seem to be an excellent instrument, especially in cases of tortuous strictures, where it is sometimes very difficult to pass the olivary bougie. Dilatation has also been practiced by passing a thin rubber tube into the stricture and then inflating the tube with air, water, or mercury. Caustics have also been recommended for the destruction of the cicatricial tissue, but great care is necessary in their use, and, upon the whole, they are of doubtful utility. The cure of a case by dilatation often requires a long course of treatment, of from six to eighteen months, but when the difficulty in swallowing solids has only existed a few months, or a year, the dilatation may sometimes be completed within a month.

In performing this operation, a medium sized bougie should first be selected to locate the stricture, then smaller ones should be tried until one is found that can be readily passed. The next size larger should then be passed, and this followed by a still larger one, if it does not give the patient too much pain. After three or four days, the the operation should be repeated, beginning with the next to the largest passed at the last sitting, and following it with the next two larger. This treatment is to be continued at regular intervals until the opening in the œsophagus is

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sufficiently large, excepting that if inflammation arise, so that the treatment causes considerable pain, the dilatation should be suspended for a few days. Having obtained a sufficient dilatation, the patient must be taught to pass the bougie himself, and should be instructed to introduce it at least once a week, for a number of months, and once in two weeks for several months longer. To introduce the bougie, the patient should be seated in a firm chair, and given to hold a basin partly filled with water, ostensibly that he may be ready in case of vomiting, but really to prevent him from throwing up his hands to catch the instrument or the arm of the surgeon. Then, the bougie having been oiled, the forefinger of the left hand is passed well over the back of the tongue, and with it the bougie is guided into the œsophagus. The instrument will usually pass much more easily at one side of the throat, and it will seldom go down the median line. Very little force must be employed in introducing the instrument, never more than two or three pounds pressure being made. The bulb, having been passed slowly through the stricture, should be drawn back into it again and allowed to remain there as long as the patient will tolerate it, which will be for a few seconds only.

Internal œsophagotomy is practiced in essentially the same way as internal urethrotomy.

Renewed interest in the electrolytic treatment of strictures of the œsophagus has been excited by the report, made by Dr. A. Fort, of Paris, of nineteen cases treated by this method. Eight of these were of fibrous character, and after a treatment varying from nine to thirty days, seven of them had been cured so that bougies from 18 to 20 millimeters in diameter could be readily passed and food of all kinds could be easily taken. The remaining eleven were of malignant nature, and, of course, were not cured, though they had been much benefited by the treatment, and life considerably prolonged. The method, as employed by Dr. Fort,

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consists in the introduction of a bougie, carrying a platinum electrode, which is attached to the negative pole of the battery, the positive pole being applied over the epigastric region. Through this, a current of from 15 to 30 milliamperes is passed, and the electrode is left in position as long as the patient can bear it, which varies from 30 to 150 seconds. After removing the electrode, an œsophageal bougie is introduced, one or two millimeters larger than the one that could be originally passed. This treatment is repeated at three or four sittings, it being thought best to proceed slowly in order to avoid accident. Thus far, no hemorrhage or lesion of the walls of the œsophagus has occurred, and the results have been so very satisfactory that the method will doubtless be tried by many other surgeons. A brief report on this method is found in the *Journal of Laryngology and Rhinology* for March, 1890.

In my records, I find the history of twenty-six cases of this disease, which I have seen in private practice. I have also seen a considerable number at the dispensary. From these I have selected a few which illustrate various interesting points in the history or treatment of this disease.

Case 1.—Malignant Stricture, with typical history, symptoms and signs.—Duration 28 or 29 months.—M. A., aged 59. The patient gave a history of gradually increasing difficulty in swallowing, which had begun sixteen months previously. For five months he had been unable to attend to his ordinary duties. He complained of some pain about two inches to the right of the sternum, upon the level with the second rib. There was an anxious expression of the countenance and he had emaciated until his weight had been reduced from 175 to 123 pounds. His tongue was clean; he had a good appetite, but was unable to swallow solid food. There was no hereditary history of malignant disease. The heart and lungs were normal. On attempting to pass an oesophageal bougie I found the stric-

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ture three inches below the opening of the œsaphogus, through which I could not pass even the smallest olivary body, which measures eight millimeters in diameter. Diagnosis, malignant stricture of the œsophagus. As a forlorn hope the patient was given iodide of potassium. However, the treatment proved of no avail. He lived about twelve months afterward, making the duration of the cancer in this particular case 28 or 29 months, which was fully a year longer than usual.

Case 2.—Malignant Stricture.—Mrs. P. F., aged 51, was sent to me by Dr. Best, of Arlington Heights, Ill. She had been troubled with difficulty in swallowing for two years. For the last five months she had found it impossible to swallow any solids and had suffered severe pain, even on attempts to swallow fluids, portions of which often regurgitated through the nose. The doctor informed me that since her trouble with swallowing began, she had suffered from an abscess of the larynx, which had opened externally. For many months there had been some cough and hoarseness. She had been subject to asthma ten years, but had never presented any symptoms or signs of tuberculosis. Her mother was subject to asthma, but there was no other history of hereditary disease. The patient was weak and emaciated, and had a temperature of 100°. Pulse full 88 per minute. She said the appetite was good, though she was unable to swallow. Upon an examination of the chest I found no evidence of pulmonary disease. Upon examining the larynx I found it congested, the arytenoids somewhat swollen and their posterior surfaces ulcerated, but there was none of the appearance so commonly found in laryngeal tuberculosis. Owing to the evident nature of the disease, I made no attempt to pass an œsophageal bougie, and could only recommend palliative treatment. I suggested for this purpose the application, once or twice daily, of a pigment containing

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four grains of morphia, thirty grains each of tannic acid and carbolic acid, four drachms of glycerine and enough water to make an ounce. This pigment I have often used with benefit in tubercular laryngitis and have sometimes found that it gives great relief in cancerous affections. This case illustrates the close resemblance which this disease sometimes bears to tuberculosis. The patient died about seven weeks afterward.

Case 3.—Stricture, with Dilatation of the Œsophagus.—P. D. G., aged 37. This patient came to me from New Mexico, complaining of having had difficulty in swallowing for the last ten months. He was still able to swallow solids if he used great care. Usually, the food lodged when part way down the œsophagus. He had lost about 15 pounds of flesh in the last four months. Although the patient readily answered all questions, careful inquiry could not discover any history of syphilis; therefore I think he had never been infected. No cause for the trouble could be discovered. In attempting to pass a bougie it became caught in a dilated pouch about three inches below the orifice of the œsophagus, and I was unable to get it farther. A No. 17 American catheter passed through the stricture. The patient was given 10-grain doses of iodide of potassium, but was unable to take it. The dose was reduced to 5 grains and he was also given 1-24 of a grain of chloride gold and sodium three times a day. I saw him only three or four times, and at the last visit found his power of swallowing had been considerably improved.

Case 4.—Stricture, with Polypus, the latter expelled spontaneously.—H. E., male, aged 32, came to me from a neighboring State. He had been troubled with difficulty in swallowing for several years. He told me that two or three years before he had coughed up a polypus about ¾ of an inch long by ½ inch in diameter. And that subsequently there had been no

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trouble in deglutition for some time; but recently the difficulty was gradually returning. He had a hacking cough but difficulty in respiration, and the general health appeared good for one of his age. I had no difficulty in passing a bougie, 12 millimeters in diameter, but could not pass the next size larger. Diagnosis, stricture of the œsophagus near the upper portion. No treatment was adopted owing to the patient's inability to remain in town.

Case 5.—Spasmodic Stricture of the Œsophagus.— B. C. H., male, aged 32, came to me from Central Wisconsin. He had complained for four months of a raw sensation in his throat, and, for a year, of soreness when eating, at the cardiac orifice of the stomach. During this time he had been unable to swallow solids of any kind. He stated that much of his food passed down almost to the stomach where it lodged and remained for some time and was then gradually regurgitated, but that whenever any passed into the stomach it caused pain in the region of the lower end of the œsophagus. The patient was weak and ænemic, and had lost nearly sixty pounds of flesh. Pulse normal; temperature $99\frac{3}{5}°$. Appetite and digestion good. There was no evidence of pulmonary trouble, and there was no history of hereditary disease. I found spasmodic contraction of the œsophagus at the cardiac orifice of the stomach, but had no difficulty in passing the largest size bougie, 22 mm. in diameter. I thus demonstrated to the patient that he was able to swallow solids of any kind, and by the dilatation, relieved the tendency to spasm. I gave him Allen's extract of cannabis indica, $\frac{1}{4}$ grain; brucia, $\frac{1}{16}$ grain, and dextro quinia, 2 grains; to be taken one-half hour before each meal, and ordered 15 grains of bromide of potassium to be taken four times, daily, in water. He returned to his home and a few weeks later I heard that he had entirely recovered.

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Case 6.—Spasmodic Stricture with slight Fibrous Stenosis.—H. W. G., male, aged 29, butcher. The patient informed me that he had had difficulty in deglutition for two years, and that it had become very annoying of late, so that he had to live mainly on fluids. He complained of no pain but simptly of a distressed feeling when trying to swallow. There was an anxious expression of countenance, and he had lost 20 lbs. in weight. The pulse was normal, and the temperature 90°. His father had died of consumption, but there was no other evidence of hereditary disease. His tongue was coated, but the appetite was good and the digestion normal.

From the history I concluded that there was a stricture of the œsophagus, but I found no difficulty in introducing a large size bougie 20 millimeters in diameter. This, however, caused some pain. Upon the next visit I introduced my lergest bougie 22 millimeters in diameter. The patient was given dilute phosphoric acid and quinine and subsequently the bromide of potassium. The difficulty in swallowing was cured by the introduction of the largest bougie.

Case 7.—Spasmodic Stricture with slight Fibrous Stenosis, promptly cured by dilatation.—Mrs. B. C. This patient, a frail little woman of 38, came to me from Minnesota, complaining of having had difficulty in swallowing for six months, and being unable to eat solid food. She said that six months previously she had taken a severe cold, and that a physician had made a very strong application, since which time her throat had always felt badly. She attributed the whole trouble to the application, though doubtless it was the result of the cold. She was weak, emaciated and anaemic, but had a good appetite and good digestion, though she could not swallow solids. There were no signs of pulmonary disease. The passage of an œsophageal bougie, 15 millimeters in diameter, gave her considerable pain, and was followed by two or three drops

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of blood the first time. I repeated the dilatation two or three times and gave her tincture of iron, in doses of from ten to fifteen minims three times daily. She was also given small doses of belladonna and nux vomica. Four weeks later she left the city greatly improved in her general condition, and cured of the œsophageal trouble.

Case 8.—Fibrous Stricture, possibly of hereditary origin.—Known to have existed 18 years.—Calibre of stricture enlarged from 6 mm to 10 mm by these treatments, but discontinued on account of an attack of gout.—T. V. A., aged 62. This patient came to me in 1884 having had difficulty in swallowing for ten or twelve years. For the past five years he had found it always necessary to have water at hand to wash down solid food. He knew no cause for the disease, but related that when a boy he was subject to frequent rheumatic attacks, and that late in life he had frequently experienced symptoms of gout. The patient, who was a retired physician, thought the disease might be hereditary as his brother and one niece seem to have been affected in a similiar manner. His father and one or two brothers had suffered from gout, but there was no history of other hereditary disease. The patient had suffered from a severe attack of neuralgia about four months previously, and at that time had lost 20 or 25 lbs. in weight, but this did not seem to be in any way connected with the stricture. He was obliged to live mainly upon fluid food. Upon attempting to pass the œsophageal bougie found a long tortuous stricture opposite the fourth dorsal vertebra, through which it was impossible to pass my smallest olivary body, though I succeeded in introducing without much difficulty an elastic bougie 6 millimeters in diameter. Three days later, I introduced one 7½ millimeters in diameter, and nine days later one 10 millimeters. The patient shortly afterward had an attack of gout and the treatment was not resumed. I have occasionally seen this patient on the street

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during the last six years, appearing about the same as at the last treatment, and I understand that the difficulty in swallowing has not greatly increased. This case is specially interesting because of the existence of the disease in other members of the family, and because of its long duration, and the age of the patient.

Case 9.—Membranous Stricture.—One of the most curious cases of stricture of the œsophagus which I have ever met, was that of a woman about 46 years of age, who came to me complaining of having been unable to swallow solids for three or four years. She knew of no cause for the trouble. Upon passing the œsophageal bougie, it came to an obstruction about three inches below the upper part of the larynx, but as I made gentle pressure upon it, something which had the feeling of being a thin membrane suddenly gave way and the bougie passed easily into the stomach. I saw her about a week later and found that she was completly cured.

Case 10.—Fibrous Stricture cured by dilatation.—S. O. W., aged 39, sent to me by Dr. Bass, of Pullman, Ill. The patient complained of difficulty in swallowing, particularly of solids, which had annoyed him for a year and a half. It was attended by slight pain, referred to the left side of the trachea. The trouble had come on gradually, but had steadily increased, until it gave him great annoyance, and his weight had been reduced from 145 to 123 pounds. There was no evidence of hereditary disease, or of syphilis, and the patient could assign no cause for the trouble, excepting a severe exposure three or four years previously. I found a stricture at the upper part of the œsophagus, through which I passed, with some difficulty, a bougie measuring 12 mm. in diameter. I saw the patient on an average of once a week, for five weeks, and gradually increased the size of the instruments used, until finally, I could introduce, without great difficulty, one measuring 19

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mm. in diameter, and the patient could swallow solids with but little difficulty. He continued in this condition until I lost sight of him, about a year later.

Case 11.—Fibrous Stricture.—A. A., male, 3 years 9 months of age. This little patient was sent to me by Dr. Wheeler, of Latham, Ill., with a history of having swallowed concentrated lye, about two and a half years previously. Since that time, he had been unable to eat any solid food. During this time, he had, on several occasions, attempted to swallow solids, but each attempt had been followed by complete closure of the œsophagus, which had lasted from two to nine or ten days. During these so-called spasms, he was unable to swallow liquids. Notwithstanding this, the child was well nourished. I found the stricture three inches below the superior opening of the œsophagus, but I was unable to pass even the smallest bougie. As the child was doing well, I recommended that the parents continue the liquid nourishment and wait until it was older before an attempt at radical treatment should be made.

Case 12.—Fibrous Stricture.—D. B., male, aged 30. This patient came to me from Wisconsin, with a history of gradually increasing difficulty in deglutition, which had prevented him from swallowing solid food for several months. He could assign no cause for the trouble. Upon examination, I found a stricture about three inches below the upper portion of the larynx. which would admit only one of the smallest sized bougies. This stricture I gradually dilated, as already described, every three or four days for about four weeks, when the largest sized bougie could be readily introduced, and swallowing was accomplished without difficulty. The patient was then taught to introduce the bougie himself, and was instructed to do so at least once a week, for several months. He returned to his home, and a complete cure was effected.

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Case 13.—Fibrous Stricture.—Typical History.—No known cause.—Rapid improvement under dilitation.—Mrs. E. M., aged 59, was sent to me by Dr. J. R. Jones, of Emporia, Kan. She stated that six months previously she had suddenly found it impossible to swallow solids, and that ever since that time, meat could only be swallowed with great difficulty. When the attack first came on, she had been unable to swallow even fluids for three days, but all food taken into the œsophagus had been regurgitated shortly after. Subsequently, she was comparatively well for several weeks, when another attack, like the first, came on and lasted five days. She then remained comparatively well for three weeks, before consulting me. I found no history of hereditary disease. The patient was weak and emaciated, having lost nearly 40 pounds. The skin was pale and sallow, and there was some œdema about the ankles. There was no fever, and the pulse was only 90 per minute. The appetite and digestion were good. I found a stricture at the cardiac orifice of the stomach, which would admit a bougie of only eleven millimeters in diameter. At her next visit, I introduced first a bougie of 11 mm. in diameter and then one of 13 mm. On the following visit, the same instrument was used, and on the succeding visit one of 13 mm. and subsequently one of 16 mm. was passed. She could then swallow very much better, but, as she was unable to remain in the city, the subsequent treatment was delegated to her home physician. Have never learned the result.

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ANOSMIA.

JOHN EDWIN RHODES, A. M., M. D., CHICAGO.*

An interference with, or a loss of the sense of smell is not an uncommon affection; frequently there may be a complete suspension of it for a time, when a removal of the condition producing it will restore it to its normal state. In some cases the interference is slight and of so little inconvenience to the patient that the fact is discovered only by accident. The sense of smell is closely allied to that of taste, however, in the determination of all flavors, save bitters, sweets, acids and salts, and if the olfactory sense has been affected to this extent, the deprivation is more serious and no longer a matter simply of inconvenience. The anosmic patient may be exposed to certain dangers, too, from the inability to detect the presence of escaping gas, foul odors, sewer air, the odor of decaying fruits, vegetables, etc., but such condition being recognized, proper precautions can be taken to avoid these dangers.

The olfactory area lies in the upper part of the nasal cavities. The nerves themselves spring from the under surface of the olfactory bulb, which rests on the cribriform plate of the ethmoid, and are distributed to the roof of the nose, the upper part of the septum, the superior and middle turbinate bones, and the surface of the ethmoid in front of these bones. The nerve filaments do not reach the lower turbinate bodies, or the lower two-thirds of the septum.

*Clinical Professor Diseases of Throat and Chest, Woman's Medical College.

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Anosmia may be confined to one of the nasal chambers, but it is usually bilateral. In cases where it is unilateral, there may be some obstruction to the entrance of the odoriferous particles to the olfactory area. We see cases in which there is marked hypertrophy of the lower and middle turbinate body, a marked deflection of, or exostosis from the septum, or a deformity from injury with an accompanying partial loss of smell. The correction of these conditions will often remedy the defect, but they may be of such long standing that the function of the nerves has been nearly, or quite, destroyed.

One of the most frequent causes is the presence of nasal polypi. When these are closely crowded in the upper portions of the nares, there is always interference with, often a complete loss of the sense of smell, and it may become permanent, if the condition has been of so long duration that the nerve terminals have degenerated, and no subsequent treatment will restore them to their original integrity.

The loss can sometimes be traced directly to a severe cold, an examination of the nares revealing no abnormal conditions, save, perhaps, congestion, with slight swelling. It is usually temporary, but may become permanent.

It has been claimed that the free use of the galvano-cautery in the nasal passages has been responsible for cases of anosmia, and is a reprehensible practice for that reason. The situation of the olfactory area is in the upper part of the chamber. Cauterization, in a vast majority of cases, should be confined to the lower portions, to the inferior turbinate bodies, and the inferior two-thirds of the septum, which the filaments do not reach, and would be harmless, so far as injury to the olfactory nerve is concerned. The careful use of the cautery on the middle turbinate body and the upper portions of the nares may sometimes cause slight injury to these nerves, but its free use is doubtless apt to impair, perhaps destroy, the sense of smell completely.

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It is not improbable that the use of many strong or caustic applications in the nasal passages have caused anosmia. A rhinitis, simple or syphilitic, may so involve the glands of the Schneiderian membrane that it becomes dry, or there is no longer sufficient fluid to dissolve the odoriferous particles when they come in contact with the olfactory area. Other causes are long continued contact with foul odors, paralyses of the fifth and seventh nerves, brain disease, etc. In some cases, I believe there is a congenital defect. I have observed several members of a family in whom the sense of smell was either impaired, or altogether wanting.

Dr. E. Fletcher Ingals has had an interesting case under observation for several years. Mucous polypi were present and were removed when the patient was first seen, and there has been subsequent treatment with the galvano-cautery, and operations for the removal of nasal obstruction. The lady suffers from a complete suspension of the senses of smell and taste, but at times, for an instant, perhaps, sometimes for two or three hours, they return fully, only to disappear again completely. She sometimes sits down to dine in the full possession of the senses of smell and taste, but loses them before the meal is finished. There is now no nasal obstruction and the nares are in a fairly healthy condition.

Anosmia resulting from an injury is very rare. The following case recently came under my observation:

R. L. P., aged 27, a school teacher by profession, was thrown from a wagon about Nov. 5, 1886. He remembers being struck on the side of the head by the rim of the wheel, in his descent. He was left lying in the middle of the road until friends reached him, about three-quarters of an hour after the accident. He was unconscious, and remained so for nine days, being treated during the period by hypodermics of of morphia. When he returned to consciousness, he discovered that he had lost his sense of smell completely. He was weak during the winter and suffered from marked loss of memory. Hearing was defective, especially in the right ear.

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He suffered, also, from severe frontal headaches. These continued for a year, and he has had them occasionally since that time. His memory is now as good as before the accident, but it has become necessary to learn again many things he had known perfectly before. His hearing has been fully restored. He had an injury to one eye about twenty-two years ago and it was removed about a year ago, as the other eye was becoming affected. Recovery from the operation and results is perfect. Before his fall the sense of smell was normal; it has not been restored. He cannot distinguish the strongest odors. Aqua ammoniæ fortior causes simply a tingling sensation in the nose. Foul odors can often be distinguished by the sickening sensation caused, and depressing headaches follow long-continued contact with them. Examination of the nose shows no abnormal condition to account for the anosmia. The sense of taste is not acute, but he can distinguish marked flavors, those of a delicate nature making no impression. His general health is perfect and has been, with the exception of the year succeeding the accident. There is a slight depression in the mastoid portion of the temporal bone, one and one-fourth inches behind, and a little above the external auditory meatus. He says there was simply a discolored spot there after the injury, but no fracture was discovered, and there were no other marks about the head.

No treatment has been suggested that will relieve a case of true anosmia. If dependent upon local conditions, as deformity of nasal structure, excessive hypertrophy, or nasal polypi, surgical measures may result in complete or at least partial relief. If there has been an obliteration of the function by the presence of polypi for a number of years, there is little hope for its restoration. In a nasal catarrh of two or three years standing, associated with an anosmic condition, the latter invariably becomes permanent. Where the sense becomes blunted, Mackenzie recommends a remedy suggested originally by Althaus—strychnia in doses of grs. $\frac{1}{24}$ to $\frac{1}{12}$, combined with two grains of starch, as an insufflation, twice a day. Other drugs have been tried, but with little success.

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When anosmia is symptomatic, as in some cases of brain disease, or when there has been a degeneration of the nerve itself, no treatment is of any avail. In the case noted in this article, there may have been a sufficient displacement of the bulb to sever its connection with the nerve filaments, or a destruction of the integrity of the bulb itself, and no relief could have been expected from treatment. Some authors advise the use of the galvanic current, but with the majority of those who have used it, the results have not been satisfactory. In the hands of a few, there has been some success in the use of a mild Faradic current. Bosworth suggests the employment of agreeable odors, as powerful as can be obtained, changing them frequently, thus stimulating the enfeebled nerves into functional activity.

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MENTHOL IN DISEASES OF THE AIR PASSAGES.

SETH S. BISHOP, M. D., CHICAGO.*

Menthol is a peppermint camphor, a powerful antiseptic and local anodyne. I have used it considerably in a variety of diseases, and believe its remedial properties entitle it to an important place in the work of general practitioners and specialists alike.

To speak systematically concerning the effects of the menthol on the upper respiratory tract, we will begin with the nose. Acute coryza, or influenza, in the first stage, can be stopped by inhalations and sprays. If the attack is a light one, nothing is necessary beyond smelling the crystals contained in a wide-mouthed vial or tube. I have cut short colds in the head at their very onset by such inhalations of thirty minutes' duration. This, of course, was before the nasal irritation had passed to the stage of inflammation. The sense of fullness and constriction about the nose and frontal sinuses, and the flow of mucus, disappeared, the nostrils opened for the free passage of air, and complete relief followed. This remedy is well adapted for such inhalations on account of its being very volatile.

In the later stages, where inflammation existed before the treatment began, it was necessary to use sprays of menthol dissolved in liquid albolene, in order to protect the membrane and keep the medicine in contact with the diseased surface a long time.

*Surgeon to the Illinois Charitable Eye and Ear Infirmary, etc.

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The strongest solution I have used was twenty per cent., but that is too powerful for most individuals. Five to ten per cent. solutions are as strong as people generally will bear without discomfort. The sense of heat is considerable at first, and it contributes to the comfort of patients materially to instruct them to take several inhalations of air directly after using the sprays. This converts the burning sensation into one of agreeable coolness.

Even in chronic cases of nasal catarrh, I have been able to open a closed nasal passage by one or two treatments of a fifteen per cent. solution and afford great relief to mouth-breathers. Whenever a patient comes with turbinate bodies so enlarged as to obstruct the passage of air, and prevent the entrance of sprays through the nostril to the throat, I resort at once to this remedy, with the effect of shrinking the engorged tissue and restoring the natural air channels.

It is advantageous to prescribe these inhalations in one form or another for patients who take cold easily, so that they can employ them at home whenever a cold is coming on. A dram or two of the crystals in a wide-mouthed vial, with a metallic screw cap, or glass tube, is a convenient device. A pledget of cotton should be pressed into the vial to prevent the menthol from working out and coming in contact with the nose, otherwise it will occasion smarting sensations wherever it touches the nostrils. If a large glass tube is used, both ends should be plugged with cotton-wool. As menthol does not melt at a temperature below 98° F., it can be carried in the pocket for ready and frequent use. When not in use, however, it should be corked to prevent evaporation.

In prescribing it for patients to use in atomizers, it is best to use it not stronger than a five to ten per cent. solution in oil or fluid vaseline. Albolene is preferable to vaseline, for the latter alone often proves irritating to the Schneiderian membrane.

In chronic hypertrophic rhinitis with foul-smelling

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discharge, menthol is sufficiently antiseptic and corrective to lessen the amount of discharge and banish the odor. The peppermint aroma is usually agreeable, and more especially so when it supplants the stench of decay.

In atrophic catarrh, the stimulating properties of this inhalent, combined with the emollient and protective qualities of albolene, afford a means of speedy improvement.

Pruritus nasi yields to nothing but cocaine more readily than to menthol, and in this connection, if it will not be too flagrant a tax upon our sense of continuity to pass from the upper air passages to the seat of pruritus ani, it will enable me to remark, parenthetically, that menthol is vastly superior to cocaine in its effects here. I have seen the most exquisitely torturing, itching and burning of the anus relieved in a few moments by a twenty per cent solution of this simple drug, after other ordinary and extraordinary remedies had utterly failed.

In laryngitis, not dependent on a rheumatic condition, menthol proves valuable. Even in rheumatic laryngitis, it is an efficient adjunct to salicylate of sodium, iodide of potassium, etc. In simple acute laryngitis, if used in the early stage, it will relieve as it does in coryza, but the spray is the most effectual. When the soreness of the larynx and trachea and hoarseness appear, a few inhalations of the spray often nip the attack in the bud. It relieves the hoarseness and imparts a smooth, reed-like timbre to the voice. In advanced cases, several inhalations should be used in the course of the day, and a continuous effect is often advantageous. This can be had by keeping a saucer heated in the patient's room and dropping a few crystals on it during the day and night. They melt readily at a low temperature and fill the atmosphere with their penetrating fumes.

In whooping cough, I have had patients inhale it constantly from a cloth saturated with the solution placed beneath the chin. Besides this, I have sprayed the nose and throat

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daily, taking care to project the spray into the throat just at the instant of inhalation. The paroxysms of cough were lessened in intensity and frequency, and the course of the disease appeared to be shortened.

Bronchitis does better under these inhalations than with other topical applications or with internal medication alone. The spray should be taken following a forced exhalation and retained as long as possible in the bronchial tubes before emptying the lungs preparatory to the next inhalation. This brings the fine smoke-like vapor in contact with the diseased surface. It is best to have patients exhale it through the nose, and it can readily be seen pouring out the nostrils after a forced retention for several seconds, showing that the respiratory tract is thoroughly medicated. The effect is distinctly felt deep in the chest.

In catarrhal conditions of the eustachian tube and middle ear, I have employed menthol on account of its effect in relieving turgescense and stenosis in the nasal passages. And by the grace of the eustachian tube, we may properly speak of the tympanic cavity as a part of the air passages. I use the menthol in Buttle's inflator in the same manner as the iodine crystals, substituting cotton for sponges. If a stronger impression is desired, I use the liquid albolene solution. Simply throwing the spray against the eustachian orifices with the De Vilbeiss atomizer results in a thorough impression on the tube and tympanum.

Suppurative inflammation of the middle ear yields readily to the menthol treatment. Long standing cases have healed rapidly after an initiatory use of the twenty per cent. solution. I have just seen several cases of this kind in which the purulent discharge ceased after a few such treatments.

Furunculosis of the ear has been, in my hands, more amenable to this than to any other remedy. A pledget of cotton, moistened with a twenty per cent. solution, should be

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so placed as to keep it in contact with the center of the furuncle. A warm or burning sensation follows, but soon gives place to one of coolness. The pain is relieved, the bacteria destroyed, and the swelling and discharge dissipated.

I have not yet tried it in hay fever, but have taken steps to have it given a thorough trial during the coming summer by the members of the United States Hay Fever Association.

In corroboration of my account of the behavior of menthol in my practice, I will quote briefly from a few authors on the subject.

Mr. Lennox Brown says: "Menthol contracts the capillary blood vessels of the nose and throat, arrests sneezing and nasal discharge, stops pain and fullness of the head, and kills the microbe of infection. When the nasal discharge is excessive, it is checked; when deficient and thickened, as hypertrophic rhinitis, its healthy character is restored; and when it is arrested, inspissated and malodorous, as in atrophic rhinitis, fluidity is promoted and the foul smell corrected."

William Hill, of London, claims to have found menthol to be an excellent substitute for cocaine in hay fever.

Jones is authority for the statement that inhalations of menthol have proved useful in asthma. He used a twenty per cent. solution in olive oil and relieved a case that resisted all common remedies.

Nyes says that these inhalations facilitate and diminish the expectoration in chronic bronchitis and relieve the cough.

Potter and Knight have reported cases of improvement in laryngeal phthisis, and Rosenberg and others claim a large percentage of cures from the local applications of menthol.

It is not my purpose to speak of the effects of this drug when administered internally, or when applied to the cutaneous surfaces for neuralgia, etc., but excluding these uses, which are yet in the experimental stage, we are justified in according this remedy an important place in therapeutics.

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DISCUSSION.

DR. E. FLETCHER INGALS, CHICAGO:

I have had some experience in the use of menthol for the last four or five years, having used it considerably, but I am sorry to say I cannot corroborate my friend's statements in all respects. He recommends strong solutions, whereas, if I should use the same solutions of menthol, I would find, as with any other irritants, that the patient would be worse afterwards. I find that hardly more than two or three grains of menthol to the ounce of liquid albolene will be tolerated by the majority of patients. Of course some patients will stand more, just as one patient will tolerate bichloride of mercury better than another. I fear you will not obtain the good results from the use of this drug that would be expected from a consideration of the paper just read, although the author's results have been excellent.

The use of menthol vapor, as an inhalation, is a different matter, and in this way I have a hope that others may find benefit similar to that recorded by the author. I presume this drug does not act very differently from other irritants, whether iodine, sulphate of zinc or anything else that will stimulate the part. The result is essentially the same whatever drug is employed, providing we get just the right amount of stimulation. Occasionally, perhaps once in four cases, menthol, properly applied, will relieve congestion of the mucous membrane for a considerable length of time, but in the majority of cases it will not do it. In these cases the swelling disappears and the nose remains comparatively free for an hour or two, but it subsequently stops up just as it would if cocaine had been employed. In nearly all cases if used in the strength, even of one and a half or two per cent. solution, the patients are made worse; at least this has been my experience.

He spoke of menthol as a good remedy for stopping discharge,

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and so it will in some cases, but if you used a little too strong, the discharge is increased by it, just as it would be by other remedies.

I was glad to hear him speak of the use of the drug in affections of the eustachian tube and middle ear. I see but little of these affections, as I do not treat diseases of the ear excepting in rare cases where they come directly from throat trouble, which requires my attention. But in those that I do treat I have latterly used about a two per cent. solution (ten grains to the ounce) of menthol in liquid albolene, and thrown it up behind the palate. I have no difficulty in most cases in getting this directly into the eustachian tubes. For this purpose I use the spray tubes which are known as Davidson's No. 66, with a tip half an inch long, which they have made at my request. This can be crowded above the point where the palate is drawn firmly against the pharyngeal wall, though with a shorter tip it cannot be done. With a force varying from fifteen to forty pounds, which can be regulated at pleasure, the menthol in solution can be forced directly into the eustachian tube, providing the nose is held while it is being applied. This pressure, however, is not applied to the middle ear, for the palate will not resist any great force, so that the vapor will pass backward into the mouth before the amount of pressure gives the patient discomfort. For this application I use a pressure of from twenty to forty pounds, according to the sensitiveness of the ear.

In hay fever the vapor of menthol gives a little relief to some patients, but, unfortunately, it is not much.

In laryngeal phthisis this drug has been used for a number of years with the same enthusiasm that has characterized the use of iodoform and many other drugs, and we will find reports of many cases of this affection said to have been benefited by menthol, but when we apply it in laryngeal tuberculosis, we find that although there is little relief given at first, an hour or so afterwards the patient feels as badly as ever. There are a few cases of laryngeal tuberculosis that are benefited by menthol, but any remedy that we may apply to the larynx, be it menthol or what not, makes very little difference in the actual condition of the parts, unless, by some means, the constitutional disease be checked. Then, and only then, the larynx may be expected to heal; however, local applications appear to hold the disease in check some times for a

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short time, and in so far as they render deglutition easier they are beneficial.

Several years ago at the American Laryngological Association, some gentlemen spoke of wonderful results obtained in laryngeal tuberculosis from the application of iodoform, which was said to have a specific influence in healing ulceration. At that time I questioned this so-called specific influence and doubted whether the drug accomplished much, if any, good. To-day, I think, all laryngologists are in accord with the views I then expressed. Menthol in the treatment of this disease has had a victory similar to that of iodoform, but thus far it has been found much less useful than the latter.

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SUPPURATION OF THE ANTRUM OF HIGHMORE.

MOREAU R. BROWN, M. D., CHICAGO.

Although a complete description of the maxillary Antrum was given by Nathaniel Highmore as early as 1601, it was not until two centuries had elapsed that the diseases occurring within the cavity began to attract the attention of surgical writers.

In 1846, there appeared in the published report of the clinical lectures in surgery, delivered at St. George's Hospital by Sir Benjamin Brodie, the first clear and detailed description of diseases of the antrum, of which we can find authentic record. In this report the description of "Inflammation dependent on local causes, inflammation independent of local causes, collection of transparent fluid in the antrum, polypi of the antrum, and malignant tumors of the antrum," is given in a manner which shows familiarity with the diseases, based upon personal experience.

The situation of the antrum of Highmore, or the maxillary antrum, is found to vary, even on different sides of the same face. In general terms its floor is said to extend above the alveolar process from the second bicuspid tooth, backward. Projecting into it are several conical processes, corresponding to the first and second molar teeth, and in some cases it is perforated by the roots of these teeth. The antrum is occasionally subdivided by incomplete bony lamellae, and it is lined with mucous membrane continued from that of the nasal cavities. Its bony walls are thin, particularly the

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orbital plate, the nasal wall and the facial wall above and between the first and second molars, and immediately above the canine fossæ. Located in the upper and anterior part of the middle meatus of the nose, and concealed from view by the middle turbinated body is the hiatus semi-lunaris, which communicates with the frontal cells and the ostium maxillare.

The term suppuration, or empyema of the antrum, is used to designate a condition characterized by the formation of pus on the surface of the mucous membrane lining the maxillary sinus. The pathological changes which takes place in the mucous membrane of this cavity during the continuance of the morbid process do not differ from those which occur in similar membranes under like conditions. The proportion of cases from the dental complications to those from other sources is, as yet, an undetermined question. A large percentage of those which fall under the observation of the dentist, owe their origin to diseases of the dental arch. Whereas, these disturbances play a more secondary part in the cases which are met with by the rhinologist. Bosworth contends, and with apparent cause, that hypertrophy of the middle turbinated body and other obstructions to the ostium maxillare, will interfere with the outflow of the secretion, the accumulation of which in a closed cavity results in a purulent discharge.

Amongst other causes are tumors within the antrum, blows upon the cheek, injury to the teeth and division of the infra-orbital nerve. Observation on the subject has led me to ascribe to the disturbance to health, which we call "taking cold," a more prominent position in the list of causes than is generally allowed to it.

A tabulated statement shows that out of twenty-one antra which were involved, nine were considered to have been of this origin. These cases were under observation from their commencement until relieved by treatment. A majority of the patients had been under my professional

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care prior to the antral disorder, and hence I am able to state positively that there was no evidence of a former suppuration. There was one point, however, which may be worth mentioning as possibly having exerted some influence over the production of the inflammation, namely: The prevalence of the epidemic of la grippe. In two of the cases, suppuration followed directly upon an attack of this disease.

The lining membrane of the antrum participates in the inflammatory process, resulting from catching cold, in a similar manner to that of the eustachian tube. After the cold has passed, the inflammation and suppuration, should it have reached that stage of purulency, may disappear, and the membrane return to its former condition, minus a certain amount of its normal ability to withstand such disturbances. Repeated attacks of this nature soon lead to the chronic form of the disorder.

Symptoms: Should the inflammation be acute, there will be pain and tenderness, with a sense of weight and fullness over the antrum, and with pressure up against the eye, hyperaemia of the ocular conjunctiva and sensitiveness of the teeth, especially noticed on masticating. The pain is increased by stooping over, and is worse in the morning.

If the inflammation owes its origin to dental complications, the symptoms indicative of these disorders are added to the above, or if it be the nasal mucous membrane that is affected, those of the coryza are also present. Should the natural outlet of the sinus become closed, as it frequently does from swelling of its lining membrane, the pain increases and the face is more tender.

The formation of pus, which is announced by a chill, causes distention of the walls, which may produce disturbance of vision by pressing on the orbital plate, and a tumor-like projection forms over the thinnest walls. Unless surgically relieved, spontaneous evacuation takes place. If the natural opening of the antrum into the nose remains free,

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the pus finds a ready outlet through this channel, and the irritation caused thereby to the delicate mucous membrane may produce an obstinate turgescence of the turbinated bodies and occlusion of the nasal passage. The purulent discharge will either gradually diminish, and finally, in the course of a few days, cease altogether, as is witnessed sometimes in coryza, or it may continue in diminished quantity and all symptoms of a painful nature disappear. The latter is more apt to occur in cases from dental complications. The discharge now takes place into the nose at intervals during the day, particularly shortly after arising from bed in the morning or on stooping over, also when lying down if the the position of the head be changed, as on turning from the affected to the sound side. In this (now chronic) form of the disease, although turgescence of the turbinated bodies seldom occurs from the irritation produced by the pus, yet it has been observed to exist in a very persistent form. And that hypertrophy may thus be brought on, or an existing hypertrophy aggravated, I can bear personal witness to. I therefore believe that the hypertrophy of the middle turbinated body, and possibly the polypoid growths so often seen in connection with chronic empyema, are rather a result than a cause.

When the dental arch has been the cause of the purulency, the pus is of a very offensive odor, the opposite of what prevailed in several of the acute cases reported in my table from catching cold. Extension of the disease into the neighboring cavities, and even death, has been noted among the rarer events.

Diagnosis: In acute suppuration we are so aided in the diagnosis by the history of the case that, with ordinary care, the disorder can readily be recognized. In chronic empyema a discharge, which is influenced by position, is observed by the patient to come from the nose. By carefully inspecting the nasal cavity we shall often find pus; it may be but a thin film on the anterior and inferior part of

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the middle turbinated body, or between it and the outer and inner wall.

When wiped away, fresh pus can occasionally be made to appear by changing the position of the head, or pressing upon the thin walls of the antrum.

Voltolini's method, as described and brought to greater perfection by Heryng, is of undoubted value. It is employed as follows: The patient is placed in a room made absolutely dark, and a small Edison incandescent lamp, of about two candle power, which has been connected with a battery, and fastened on the upper surface of a tongue depressor, is put in the mouth. The lips are now closed and the current of electricity turned on, so that the lamp may glow to its full intensity, whereupon the bones of the face will become beautifully illuminated, a darker shade marking the situation of the antrum. Should there be fluid or a tumor within the cavity, the fact will become apparent by total absence of the illumination, and the marked contrast with the healthy side.

The water rheostat made by McIntosh & Co., of this city, or a thirty-two candle incandescent lamp, used in the circuit with the Edison current, has enabled me to carry on my experiments satisfactorily.

A more simple test, and one upon which full reliance can be placed, is made with the per-oxide of hydrogen, used as follows: Cocaine having been freely applied to the middle turbinated body and the mucous membrane of the nasal cavity until thoroughly anaesthetized and contracted, a small hypodermic syringe with a long canula bent within a quarter of an inch of the distal end to a right angle is passed into the hiatus semi-lunaris, and a solution of per-oxide of hydrogen, one part to twelve parts of water, is injected into the antrum. If pus be present it is driven out and fills the nose as a white foam. That the solution has entered the antrum will be made evident by the patient com-

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plaining of slight pain at the roots of the teeth, and a sense of fullness in the cheek. I know of no test so simple, free from danger and easy of application, and yet so unfailing, as this. By its means I have been enabled to diagnose empyema of the antrum where the only symptom was a slight discharge of pus in the nasal passage. In one instance where the antra were pronounced healthy by a consulting surgeon, a subsequent operation confirmed the opinion of suppuration I had been induced to hold after the application of this test.

By the proper use of the per-oxide of hydrogen, one can satisfactorily differentiate between purulency of the maxillare sinus and the other hidden sources of pus which is discharged into the nose. Should the ostium maxillare be occluded, and we be unable to inject the antrum, the symptoms of distention would soon set in and give undoubted evidence of that condition.

If it be deemed necessary to make an exploratory puncture, the difficulties which may arise from the plugging of the canula, the thick bone, the abnormal conditions of the inferior turbinated body and the different positions of the antrum, and the danger of breaking the instrument, will cause one to hesitate before attempting it in the inferior meatus through the nasal wall, and to give preference to perforating the facial wall above the alviolus with a small drill.

Treatment can occasionally, particularly in acute cases from coryza, be advantageously carried out through the natural nasal opening by means of the canula, spoken of under the head of diagnosis, using diluted per-oxide of hydrogen in preference to other remedies. But a majority of the cases will require surgical treatment in order to evacuate the antrum and give it free drainage. Much has been written in late years as to the best method of accomplishing this.

Miculitz recently revived the practice of entering the

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antrum through the nasal wall, but the operation, for obvious reasons, seems destined to again become obsolete.

The operation which to-day stands in greatest favor among both dentists and surgeons, and which I shall presume to discourage, is that of entering the antrum through the alveolus. Regarding it, Voltolini, quoting Walb[1], advises the opening to be made through the alveolus, and considers this situation of such importance as to advise the pulling of even a sound tooth in order to carry out this recommendation. Bosworth[2] advises the artificial opening be made in the same situation.

Dr. W. Carr[3], of New York, says, "I should never hesitate to make the opening through the alveolus, even at the sacrifice of a sound tooth."

Dr. J. H. Bryan[4] is equally explicit: "The operation that has met with the most favor is that known as corper's, viz: Through the alveolar process. In case a molar tooth is present, it should be extracted and the opening enlarged."

Garretson[5] says: "The second molar tooth is to be extracted and penetration of the cavity effected through the alveolus of the palatine fang."

After such evidence in favor of the operation through the aveolus, and without reference to other authority, we should seriously consider the question as to the most advisable position for the opening to be made into the antrum before we condemn that which has the support of men of experience, and which has endured the test of time, and offer in its stead an operation, which to say the most of it, has but the result of a few cases in evidence of its claims for superiority.

The prime object of opening the antrum is to give it free drainage, and to enable us to medicate its diseased mucous membrane. The latter of these indications is easy

1. See Voltolini Krankheitender Nase. 2. See Diseases of the Throat and Nose, Bosworth, p. 478. 3. Diseases of the Antrum, Journal of the American Medical Association, Dec. 21, 1889. 4. Diagnosis and treatment of abscess of the antrum, Journal of the American Medical Association, Oct. 5, 1889. 5. A system of Oral Surgery, page 757.

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to accomplish, and the former only requires that the aperture be made in the most dependent portion of the sinus, but does drilling through the aveolus from below upward, always secure this?

Anatomists agree that there are several conical processes projecting into the antrum, corresponding to the first and second molar teeth, one of which is generally sacrificed in the operation.

When the tooth is removed the projection remains in the floor of the antrum, and if we penetrate the thin plate forming it and enlarge the opening, as is advised by writers on the subject, the base of the elevation remains and offers an obstruction equal to its height to the complete and thorough drainage of the antrum. This objection may be considered chimerical, yet we are justified in assuming it to be one which may exist, if we hold the statements and drawings of anatomists correct, and as yet we have no reason to doubt them. This may possibly have been the cause of failure to check the formation of pus in some cases reported in medical literature.

A plug retained in the artificial opening will maintain its patulency and exclude foreign matter, but it will also interfere with complete drainage. It, however, will serve to bring about good results if the case has not been one of long duration. A tube of metal will be required in the more chronic cases, but the use of this, when placed through the alveolus from below, is an annoyance to the patient, and he may fail in his endeavor to keep foreign matter from entering it.

Modern dental surgery has taught us to value a dead tooth, and even a root, provided it is not causing irritation, and hence it appears to be our duty not to lightly sacrifice them for any purpose, when the same end can be accomplished by other means.

The operation which I prefer is that of opening the

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antrum in its most dependent portion, but through the upper part of, or immediately above, the alveolus, as follows: The mucous membrane, having been locally anaesthetized, an incision is made into it, or a small piece is cut ont with a tubular knife just below the gingivo-labial fold, between the upper portions of the roots of the second bicuspid and first molar teeth. A drill, preferably, driven by an electric motor, is entered at the point of incision into the soft tissues and directed upward, inward and slightly backward, forming an angle of about 45° with the plane of the alveolus. A few revolutions will send the drill into the antrum, at is most dependent portion. The opening thus made must be of sufficient diameter to admit of thorough cleansing and draining. A gold tube is to be well fitted, so that the distal end will enter just within the antrum, and to the other end, projecting beyond the mucous membrane, a small strip of gold is attached and fastened to a collar around the tooth. By this method we have free drainage without the danger of foreign substances entering the antrum, and plugging the tube is not necessary. I find that cases so treated have invariably done better than those where the opening had been made through the alveolus from below, and as the operation is free from any of the objections made to the latter, I urge its trial, and condemn the extraction of a sound, or even of a diseased tooth, for the purpose of entering the antrum.

The after treatment consists in daily, or twice a day, washing the cavity with a saturated solution of boric acid, and occasionally injecting iodine, sulphate of zinc or subnitrate of bismuth.

A summary of the nineteen cases, which have come under my observation during the past eighteen months, shows, of twenty-one suppurating antra, that nine were due to "catching cold;" eight were due to dental complications; one was due to polypi of the antrum; two,

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cause doubtful, and one, unknown cause. Fifteen were diagnosed by the assistance of per-oxide of hydrogen. Three were cured, and one is now under treatment by medication through the natural nasal opening. In ten, the antra was opened through the upper part of the alveolus below the gingivo-labial fold; in two, a tooth was first extracted; and in four, a tooth had been extracted at a prior date, and the opening made through the alveolus from below; one patient refused treatment; one is now under treatment.

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THE SURGICAL TREATMENT OF POST-TURBINATED HYPERTROPHY.

A. E. PRINCE, M. D., JACKSONVILLE.

The little I have to say on the removal of the hypertrophoid tissue, which is found at the posterior extremity of the inferior tubinated bone, is particularly addressed to those who have found difficulty in the successful removal of these enlargements with the time-honored snare and the various methods of cauterization.

That they may be removed with the snare, or destroyed by the galvano or chemical cautery, is not brought into question, but that the difficulties attending either of these methods in a majority of cases is not small, I am convinced both by personal experience and by valid testimony of men who are not unskilled in the inspection and manipulation of these parts. Nothing sounds easier than the operation as described by Bosworth, in his recent volume on the nose and throat, page 151:

"The loop having been bent slightly to one side before entering the nares, will, by its own elasticity slip over the mass, when it can easily be drawn into place and the tumefaction cut through. Of course there is liable to be considerable hemorrhage as the result of this procedure, but if the operation be done slowly, a half hour or even an hour being consumed, it may often be done without loss of blood. If, however, hemorrhage does occur, a plug of cotton can easily be passed back and wedged between the cut surface and the

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septum, and allowed to remain until the next day if necessary."

The operation, as above described is the standard operation for the removal of posterior turbinated hypertrophy, and although it is usually efficient in the hands of a patient surgeon, and has served the purpose in the past, there are nevertheless certain disdvantages, more or less real, which it may seem worth while to attempt to overcome.

The introduction of the wire and its adjustment over the tumor, so as to get the entire tumor into the loop, is not always easy. While tightening the loop over the growth, more or less of it may escape, often resulting in the removal of small portions, and necessitating a repetition of the operation, which is thereby made more difficult.

In many of these cases, the tumor consists more of dilated blood vessels than actual hypertrophy, and in these cases it is almost impossible to apply the snare on account of its escape with the closure of the loop, in which case the removal of but a small portion of the mucous membrane may be the result. This difficulty is increased by the use of cocaine. The tedious nature of the operation, when attempt is made to avoid hemorrhage, exhausts the patience of both patient and physician.

With the greatest prudence, hemorrhage will rarely be avoided, and when it occurs, the difficulties of ocular inspection are increased, which is essential to the formation of an opinion as to the result attained.

The attempts as recommended to arrest arterial hemorrhage by "passing a plug of cotton back and wedging it between the cut surface and the septum" will seldom succeed, because this space is wider than the anterior passage, and besides, the hemorrhage may not come from the lateral face, but from the posterior end of the bone. If venous or capillary, it will cease spontaneously (except in the purpuric state). Further than the inconvenience, I regard hemorr-

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hage of no moment, because it may be effectually controlled at any location by the use of a posterior plug, which can be introduced at a moment's warning with the aid of a soft catheter. With confidence in one's ability to execute this maneuver, all danger vanishes.

The substitution which is here offered for the snare is the curved turbinated forceps, which has served me in this class of cases for about two years.

In its construction, the excellent septum forceps of Wier has been taken as a model, and it has been made with sufficient length to reach into the pharynx. To it has been given the curve of the convex surface of the inferior turbinated bone. The handles are so curved and the pivot so placed that it can be easily opened after it is introduced into position. The size is such that it can be passed readily through the inferior meatus. The blades are so made that while the biting edges come into exact contact, the edges on the convexity of the blades are cut away so as to prevent the material in the grasp of the blades from interfering with their perfect closure. Experience commends the following method of procedure: The patient is placed in a recumbent position, and O'Dwyre's gag is placed in position on the right side of the mouth. A canvas cone is placed over the mouth and the patient instructed to breathe, deeply and rapidly, with emphasis on the exhalation. Two drachms of ethyl bromide are now poured on the cone, and the respiration continued in the same artificial, rapid, deep manner.

If successful in controlling the manner of breathing, the patient will be anaesthetized in 30 to 40 seconds, when the artificial, forced respiration will be changed to natural, slow breathing.

If from any cause this manner of breathing is not maintained, the ethyl anaesthesia is not certain to be profound, when chloroform or ether may be added. The next step is the introduction of the left index finger back of the palate, bringing it in contact with the posterior end of the inferior turbin-

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ated bone, where the tissue in question will be distinctly felt as a soft, yielding mass.

The forceps are then introduced with the concavity downward, and will be found to glide easily along the floor of the inferior meatus until it can be felt by the finger. The cutting edge then rotates outward and the blades are separated. This movement will bring the tumor between the tips of the blades, the position of each of which can be precisely determined by the sense of touch. Their curvature forces them close to the turbinated bone. The blades are now closed on the tumor and the concavity rotated downward and inward through a semi-circle while being withdrawn, the effect of which is partly to cut and partly to tear the mucous tissues and vessels, thus favoring the early arrest of the inevitable hemorrhage. The operation is repeated on the opposite side without removing the finger from the mouth. The patient is then placed in a position favorable to the escape of the blood, a portion of which is always swallowed. The hemorrhage, though seemingly profuse at the time, does not continue more than a few minutes, and but little blood is actually lost. In but one case out of an approximate fifty have I found it necessary to introduce a plug to control the hemorrhage.

My excuse for detailing this procedure so minutely is found in the desire that some may be led to practice the bimanual manipulation, which will be found invaluable in the removal of pharyngeal tonsil and other forms of nasal polypi as well as this.

The form of the blades of the instrument, aided by the sense of touch, often enables one to reach the origin of a pedunculated polypus, and in some cases a small portion of the bone has been removed with the pedicle, thus demonstrating the efficiency of the operation.

Trusting that the procedure will find favor at the hands of those who may see fit to give it a trial, I submit it to your criticism and consideration.

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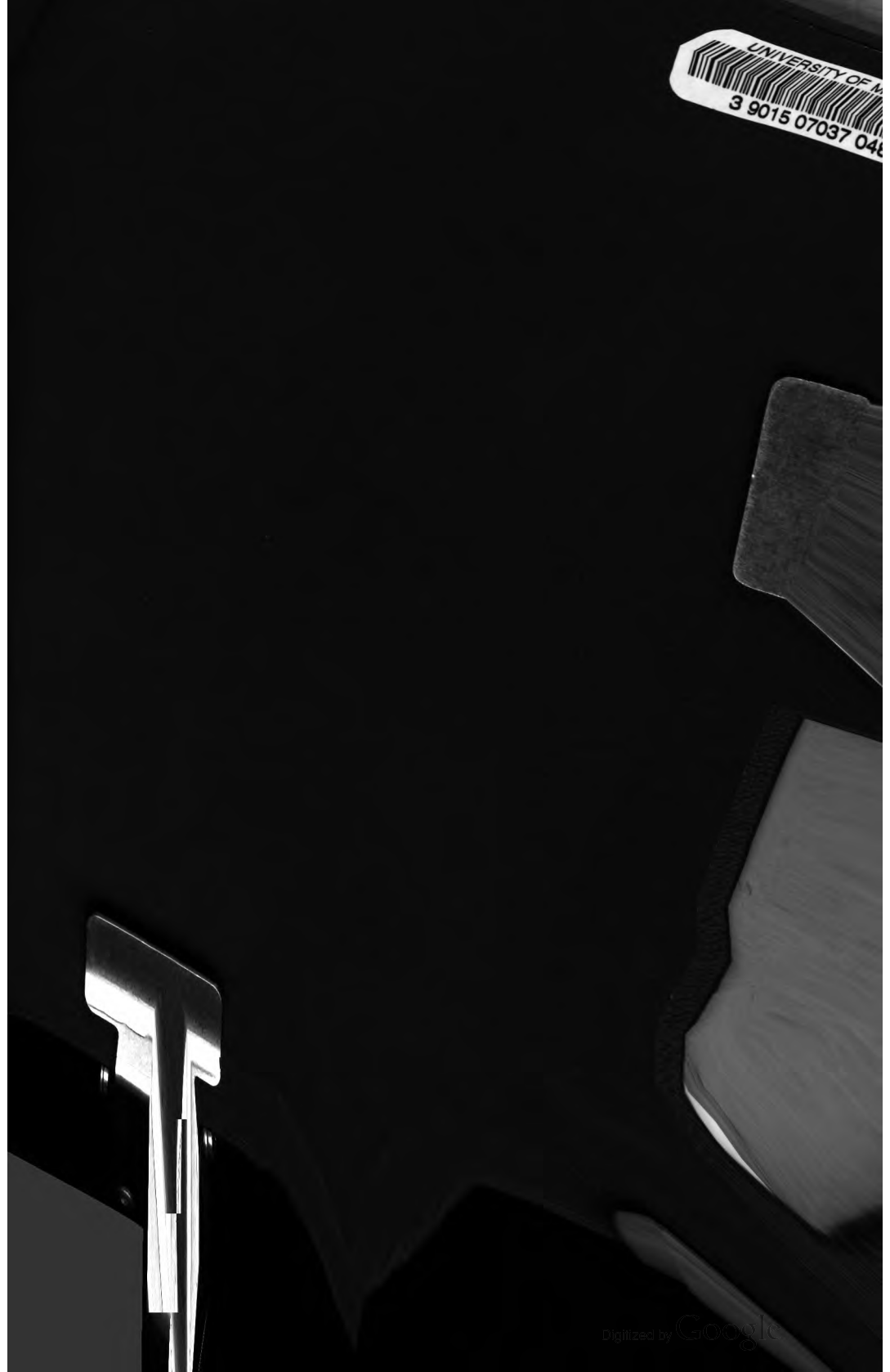
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